Proceedings of the 2nd International Conference on Interdisciplinary Humanities and Communication Studies
DOI: 10.54254/2753-7048/48/20231656

The Acceptance and Refocus on Planning in Procrastination: The Suppression of Past Negative Time Perspective

Xinlu Zhang[1,a,*]

[1]*School of English and International Studies, Beijing Foreign Studies University, Beijing, 100089, China*
a. 20010006@bfsu.edu.cn
**corresponding author*

Abstract: The recent affect-regulation (AR) model emphasizes the relevance of context and the diversity of AR strategies, which deepens our understanding of emotional processes. This study, conducted with 228 Chinese undergraduates, aims to support the AR model by investigating the connection between cognitive emotion regulation (CER) and procrastination, as suggested by the temporal mood regulation (TMR) model. The findings discovered a positive correlation between past negative (PN) time perspective and procrastination. Acceptance showed no significant correlation with procrastination, while refocus on planning exhibited a weak negative correlation. Surprisingly, PN acted as a suppressor in the relationship between CER strategies and procrastination. This study highlights the diverse impact of CER strategies on procrastination, providing support for both the AR and TMR models.

Keywords: Affect regulation, cognitive emotion regulation, procrastination, time perspective

1. Introduction

1.1. Emotion Regulation and Affect Regulation

Emotion regulation (ER) is how people regulate their emotional response towards a certain situation [1]. As the process model of emotion [2] proposed, ER strategies can be categorized depending on their stage during generation. Although the model neatly explains the emotional process and their corresponding ER strategies, there are two major limitations to this model. Firstly, the model needs to be more comprehensive in that it includes merely a small range of strategies [3]. Secondly, its evaluation of strategies needs to be more accurate due to the inadequate consideration of context [4]. To address these limitations, a novel affect-regulation (AR) model was introduced [3]. This model merges the stress and coping framework [5] and offers a more comprehensive assessment of a wider array of strategies within specific contexts. This study attempts to provide support for this model by exploring the adaptiveness of certain AR strategies in a particular event.

1.2. Procrastination

According to the definition, procrastination is people's intentional delays of actions while fully aware of their unpleasant consequences [6]. Scientists have estimated that 15%–20% of adults suffer from

DOI: 10.54254/2753-7048/48/20231656

procrastination, suggesting that this is a rather common issue across the globe [7, 8]. Scholars have sought to explain the mechanism through various aspects, such as the role of personality traits [9], parental impact [10], timeliness of rewards [7], and the integrated process of cognition, emotion and behavior [11].

The temporal mood regulation (TMR) model [11] theorizes that procrastination primarily functions as a mechanism for short-term mood regulation, often superseding individuals' long-term goals. Namely, the model includes the following elements:

Firstly, the root cause of procrastination is the urge to eliminate negative emotions [12–14].

Secondly, procrastination occurs in the goal-pursuit processes, which stretch through relatively long periods and comprise multiple phases of tasks [15]. Therefore, the aversiveness of the present tasks [16], the distance of the goal [11] and the past failure of tasks [17] can all be the sources of negative emotions.

An important but less considered aspect of the generation of procrastination is the impact of past failures. Individuals experience different emotions depending on how they perceive their past [18]. Time perspective is the internal time frame in which individuals place their personal or social experiences according to specific orders or meanings [19]. People with different time orientations and evaluations are categorized accordingly, among which past negative (PN) refers to a negative perception towards one's past [19]. Presumably, such cognition would contribute to the overall negative emotions during goal pursuit. Therefore, this study probes the relationship between PN levels and procrastination.

Finally, the choice of AR strategies can largely determine the severity of procrastination [12]. In the TMR model, strategies related to the attentional deployment stage, where individuals shift their attention away from unpleasantness [2], lead to task avoidance regardless of ultimate goals [11]. However, cognitive strategies, especially cognitive reappraisal, can effectively reduce procrastination by reshaping the cognitive source of negative emotion [12, 18, 20, 21]. To date, limited research has explored alternative cognitive strategies' impact on procrastination. This research adds to the literature by examining how theoretically adaptive cognitive strategies affect emotionally charged thinking, which in turn affect procrastination. Namely, Procrastination serves as the study's context for evaluating cognitive changes' effects.

1.3. Cognitive Emotion Regulation

Among the five stages of emotion generation, studies have proven that the intervention made during the cognitive change stage, as characterized by cognitive reappraisal, was relatively more effective as compared to other strategies [20–24]. Cognitive reappraisal is the cognitive effort to reevaluate an emotionally evoking situation [2]. However, cognitive reappraisal is not the only potentially adaptive cognitive strategy. Cognitive emotion regulation (CER) includes five theoretically adaptive strategies to manage emotion-eliciting information: Refocus on planning, positive reappraisal, positive refocusing, putting into perspective, and acceptance [25]. CER categorizes coping strategies more precisely in that it separates the cognitive and behavioral strategies [5]. Therefore, the CER strategies fit in the cognitive change stage in the AR model.

Concerning the TMR model, two CER strategies might be relevant in generating procrastination. Acceptance means to resign to previous experiences [25]. Evidences have demonstrated that acceptance predicts more optimism [26] and lower anxiety levels [27, 28]. As posited, PN might exacerbate procrastination by increasing negative feelings towards past failures. Therefore, acceptance might reduce procrastination by helping people tolerate or lessen the negative emotions from PN.

Refocus on planning means to come up with practical solutions to adverse events [25]. Multiple studies have found refocus on planning can reduce negative emotions [26, 29] while improving AR

DOI: 10.54254/2753-7048/48/20231656

ability [30, 31]. Besides, another study also found that better planning predicts reduced procrastination [18]. Therefore, refocus on planning might reduce procrastination by decreasing negative emotions and preparing individuals for upcoming tasks.

As described, the two CER strategies function through distinctive mechanisms. Presumably, the two strategies play different roles during the generation of procrastination. Therefore, this study compares the respective effects of the two CER strategies within the given context.

1.4. The Present Study

The goal of the current study is to contrast how the two CER strategies' function on procrastination. Specifically, this study focuses on the impact of PN rooted in past failures during goal pursuit. The study aims to provide evidence for the AR model as well as the TMR model. Concerning the objectives above, the study proposes hypotheses as follows:

- *Hypothesis 1 (H1)*: PN positively correlates with procrastination.
- *Hypothesis 2 (H2)*: The two CER strategies negatively correlate with procrastination, with differing correlation strength.
- *Hypothesis 3 (H3)*: PN mediates the relationship between the two CER strategies and procrastination.

2. Method

2.1. Participants

Electronic posters of an online survey were disseminated across the social networking platforms of multiple universities, soliciting participation from undergraduate students. In response, a total of 296 individuals participated; however, subsequent data cleaning procedures excluded 68 participants due to their incomplete provision of information. Eventually, 228 participants constituted the sample, and 49.1% of them were men. These participants ranged in age from 18 to 30 years old (M=21.50, SD=2.20).

2.2. Materials

2.2.1. Procrastination

The Short General Procrastination Scale (SGPS) used in this study was abridged from Lay's [32] General Procrastination Scale, with modifications made by Sirois et al. [33]. The Chinese version of the SGPS was used in this study [34]. The nine items in this version are individually scored on a five-point Likert scale, reflecting the extent of agreement from one to five. Items 3, 5, and 6 are scored backwards. More severe procrastination is denoted by a higher overall rating on this scale. The Cronbach's α of SGPS was 0.810 in this investigation.

2.2.2. Time Perspective

The Past Negative (PN) subscale from the Zimbardo Time Perspective Inventory (ZPTI) was used in this study [19]. A 25-item Chinese condensed version of the ZPTI that has been verified for both internal and external reliability was selected [35, 36]. This edition's PN dimension consists of seven items, each of which is graded on a five-point Likert scale reflecting the extent of agreement from one to five. A stronger propensity for this specific time perspective is denoted by a higher overall rating on this subscale. The Cronbach's α of the PN subscale was 0.845 in this investigation.

DOI: 10.54254/2753-7048/48/20231656

2.2.3. Cognitive Emotion Regulation

The Cognitive Emotion Regulation Questionnaire (CERQ) was developed by Garnefski et al. [25]. A brief Chinese version of this questionnaire was adapted and validated [37]. The study employed the acceptance and refocus on planning subscale of this version. Each of the two subscales comprises four items, with participants respond using a five-point Likert scale reflecting the extent of agreement from one to five. A stronger propensity for a particular strategy is denoted by a higher overall rating on the respective subscale. The Cronbach's α for the acceptance and refocus on planning subscales in this investigation were 0.679 and 0.805, respectively.

2.3. Procedure

After scanning a QR code on the poster, the participants were directed to the online survey, where a consent was presented before the survey began. Apart from basic demographic questions, participants completed the three scales in the order of SGPS, ZPTI-C and CERQ. Before each scale, a description regarding goal pursuit was given. Participants were instructed to recall one of their past goal pursuit experiences (e.g. a bodybuilding plan) before completing SGPS and imagining one of their goal failures (e.g. skipping gym schedules) before ZPTI-C and CERQ. The descriptions were given to emerge the participants in a specific goal pursuit context, which was considered as a major stage during the generation of procrastination [11]. Participants were thanked and compensated after their surveys were submitted.

3. Results

3.1. Common Method Bias

A Harman's single-factor analysis was applied to evaluate potential common method biases. The analysis revealed five factors with characteristic roots exceeding one. The variance from the first factor was 25.1%, which was below the 40% threshold. Hence, the influence of common method bias on the study's outcomes can be disregarded.

3.2. Preliminary Analyses

The descriptive statistics and Pearson's correlations for the variables are displayed in Table 1. As anticipated, PN showed a positive correlation with procrastination. Furthermore, refocus on planning exhibited a negative relationship with procrastination. Unexpectedly, both strategies were positively correlated with PN. Additionally, the correlation between acceptance and procrastination was not statistically significant. Age and gender did not show significant correlations with the variables under investigation.

3.3. Mediation Analyses

Initially, a regression analysis revealed no critical multicollinearity problem in the data (e.g. VIFs from 1.298 to 1.782). To explore potential mediation effects of PN in the relationship between CER strategies and procrastination, two bootstrapping analyses were conducted using Process macro for SPSS 23, following Hayes [38]. Each analysis involved 1000 resamplings and established a 95% bias-corrected confidence interval (CI). Regression coefficients were deemed as statistically significant when their CIs did not encompass zero.

For model 1 (see Figure 1), the results presented in Table 2 showed that the total effect was non-significant (c_1=0.04, CI= -0.211, 0.422). However, the direct (c_1'=-0.14, $p<0.05$, CI=-0.687, -0.008) and indirect effects (a_1b_1=0.19, CI=0.101, 0.281) were both significant and in opposite signs. The

DOI: 10.54254/2753-7048/48/20231656

case matches a special mediation model named suppression, where the inclusion of a variable into a regression equation increases the predictive validity of another variable [39]. Within the model, acceptance positively predicted PN (a_1=0.48, p<0.001), which in turns positively predicted procrastination (b_1=0.39, p<0.001). The effect size of this suppression model was $|a_1b_1/c_1'|$=1.34.

As to model 2 (Figure 2), the results presented in Table 3 showed that the total effect was significant but relatively weak (c_2=-0.16, p<0.05, CI=-0.968, -0.364). The direct (c_2'=-0.27, p<0.001, CI=-0.687, -0.008) and indirect effects (a_2b_2=0.11, CI=0.042, 0.188) were both significant and in opposite signs. Therefore, model 2 also exhibited a suppression effect. Within the model, refocus on planning positively predicted PN (a_2=0.28, p<0.001), which in turns positively predicted procrastination (b_2=0.40, p<0.001). The effect size of this suppression model was $|a_2b_2/c_2'|$=0.41.

Table 1: Mean, standard deviation, and correlation of variables (n = 228).

	M	*SD*	1	2	3	4	5	6
1. Acceptance	14.98	2.86	-					
2. Refocus on planning	15.98	2.85	0.57***	-				
3. PN	24.24	5.93	0.48***	0.28***	-			
4. Procrastination	27.60	6.92	0.04	-0.16*	0.32***	-		
5. Gender	1.51	0.50	0.06	0.06	-0.03	0.02	-	
6. Age	21.50	2.20	0.02	0.01	-0.07	-0.08	0.07	-

Note: PN: Past Negative. Dummy coding for gender, male=1, female=2.
*p<0.05; **p<0.01; ***p<0.001.

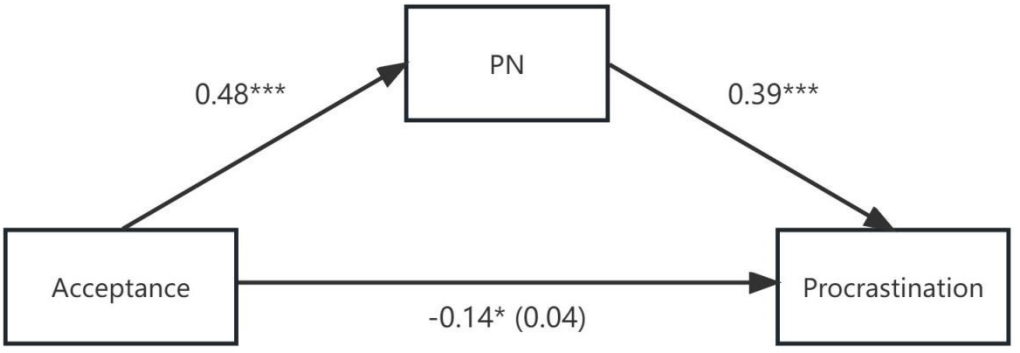

Figure 1: Model 1: PN as a suppressor between acceptance and procrastination.

Note. *p<0.05; **p<0.01; ***p<0.001.

Table 2: Regression analysis of variables in model 1.

n=228		**Goodness of Fit**			**Coefficient Significance**	
Outcome Variables	**Predictor**	***R***	***R²***	***F***	***β (SE)***	***t***
PN		0.48	0.23	67.42***		
	Acceptance				0.48 (0.12)	8.29***

DOI: 10.54254/2753-7048/48/20231656

Table 2: (continued)

Procrastination		0.35	0.12	15.28***		
	Acceptance				-0.14 (0.17)	-2.00*
	PN				0.39 (0.08)	5.40***
Procrastination		0.04	0.00	0.43		
	Acceptance				0.04 (0.16)	0.67

Note: All data in the model are standardized.
*p<0.05; **p<0.01; ***p<0.001.

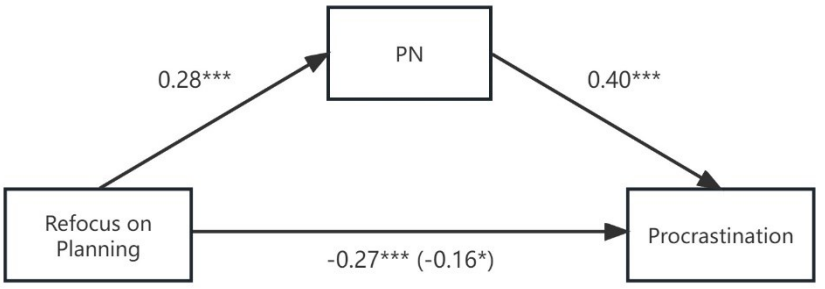

Figure 2: Model 2: PN as a suppressor between refocus on planning and procrastination.

Note. *p<0.05; **p<0.01; ***p<0.001.

Table 3: Regression analysis of variables in model 2.

n=228		**Goodness of Fit**			**Coefficient Significance**	
Outcome Variables	**Predictor**	***R***	***R²***	***F***	***β (SE)***	***t***
PN		0.28	0.08	18.99***		
	Refocus on Planning				0.28 (0.13)	4.36***
Procrastination		0.42	0.17	23.54***		
	Refocus on Planning				-0.27 (0.15)	-4.34***
	PN				0.40 (0.07)	6.31***
Procrastination		0.16	0.03	6.18*		
	Refocus on Planning				-0.16 (0.16)	-2.49*

Note: All data in the model are standardized.
*p<0.05; **p<0.01; ***p<0.001.

4. Discussion

The purpose of the current investigation is to provide evidence for the AR and TMR models. Correlation analysis supported the positive link between procrastination and PN, as posited by H1. This is consistent with earlier studies' findings, which showed that past goal failures were linked to negative feelings including worry and anxiety [40, 41], or even shame [42] and guilt [43]. According to Sirois and Pychyl's [11] theory, procrastination might be caused by unpleasant emotions brought on by how we see the past. Therefore, the finding bolsters support for the TMR model.

DOI: 10.54254/2753-7048/48/20231656

H2 posited that the two CER strategies negatively correlate with procrastination, with differing correlation strengths. The correlation analysis partially supported H2. As expected, refocus on planning showed a negative association with procrastination. However, surprisingly, the association was a relatively weak one. Another unexpected outcome was that acceptance showed no significant correlation with procrastination. Although it deviated from the original hypothesis, the result exemplified the diverse effects of different ER strategies. As the AR model proposed, every emotion generation process yields various strategies to regulate emotions [3]. To comprehensively evaluate the effectiveness of an AR process, it is necessary to include and compare different strategies. This study expands the model by incorporating CER strategies into the categories of cognitive change during an AR process.

H3 posited that PN mediates the relationships between the two CER strategies and procrastination. Regression analysis revealed that PN was instead a suppressor between the strategies and procrastination, denying H3. Nevertheless, this result explains the unexpected findings in the correlation analysis. PN suppressed the effect of the CER strategies on procrastination. After including PN in the respective models, both strategies exhibited significant direct effects on procrastination. This result accorded the theory that acceptance and refocus on planning are adaptive CER strategies [25]. The positive association between the two strategies also supported the fact. Several studies provide evidence for this claim. Acceptance predicted reduced anxiety and depression among nurses [28, 44]. Another study found that acceptance may alleviate worry [27]. Interestingly, all three studies suggest that females benefit more from acceptance.

As to refocus on planning, a past study found its relationship with less negative and more positive affect, leading to improved well-being [29]. In addition, a study found that refocus on planning predicts less depression and more resilience [31]. Another study during the COVID-19 outbreak confirmed its ability to lower people's ER difficulty during lockdown [30]. Therefore, both strategies can address procrastination by controlling its emotional causes, supporting the TMR model. That said, the two strategies were not as adaptive in the context in question due to the intervention of an unexpected suppressor.

PN's suppression effect in the two respective models was a major surprise in this study. A suppression effect occurs when the inclusion of a variable into a regression equation increases the predictive validity of another variable [38]. The inspection of suppressors can facilitate a more comprehensive understanding of psychological processes [45]. As Baron & Kenny [46] proposed, the occurrence of a suppression effect converts the original research question from "How does X manage to affect Y?" to "How does X eventually not affect Y?". Therefore, the concern of this study shifted to "Why CER had little or no impact on procrastination when PN was involved?". This study provides the following explanations.

The result showed that acceptance positively predicted PN, which in turn predicted more severe procrastination. This relationship might derive from the complex nature of acceptance. Acceptance was discovered to be associated with more depression despite being theorized as an adaptive strategy [47–49]. Therefore, the effect of acceptance varies on the targeted emotion and actual context [48]. People can either use acceptance actively to self-affirm or passively to resign to negative experiences [50]. The question in the shortened CERQ matches the latter, which evokes a sense of helplessness [50, 51]. In the current context, albeit having been accepted, the negative perception of past failures might continue to generate helpless feelings, compromising the goal pursuit.

Refocus on planning also positively predicted PN, which in turn predicted increased procrastination. A possible explanation lies in the conflict between refocus on planning and PN. Refocus on planning is people's belief in their competence to successfully devise and carry out a plan [25]. This belief, however, is challenged by the people's past failures. The more a person values his plan, the more he finds his past mistakes regretful since they complicate the planning for the

DOI: 10.54254/2753-7048/48/20231656

remaining tasks. This result aligns with previous research where individuals would regret [17] or even self-blame [52] more when they delayed their plans. As the TMR model proposed, such negative emotions would thus lead to more severe procrastination [11].

The intervention of PN further affirmed the AR model's stress on context. Previous research suggests that cognitive reappraisal is linked to lower procrastination [18]. Although all three strategies mentioned are theorized as adaptive [25], their actual effects should be evaluated within a specific context [3]. In this case, The negative perception of past failures during goal pursuit rendered two CER strategies less adaptive.

There are limitations in this research design. Firstly, Chinese undergraduate students took up the entire research population, leading to a less generalizable result. Future studies may include a more comprehensive sample to expand the findings. Secondly, this research design was cross-sectional. The simultaneous assessment of variables may not show the temporal development of procrastination, which roots in a long-term goal pursuit. Therefore, although two suppression models were identified, this research does not provide causal inference. A longitudinal design might be a fruitful path for future studies to trace the formation of procrastination and verify the relationship proposed. Thirdly, all variables in question were measured through self-reports. Future studies may affirm the current result by designing relevant tasks or other means of data collection.

5. Implications and Conclusions

The current study provided evidence for the AR and TER models. Although the two CER strategies should reduce procrastination, their effects were suppressed by PN to differing degrees, which demonstrates the diversity of AR strategies and their varied effect within particular contexts. This result reminds us that negative emotions are central in the generation of procrastination [11]. PN, among a variety of other sources, contributes to the overall negative emotions and hinders the effectiveness of the two CER strategies on procrastination. Therefore, to effectively alleviate procrastination, either in daily, educational or clinical context, it is important to identify the root cause and apply AR strategies accordingly. A strategy might become ineffective, if not maladaptive, when applied indiscriminately.

References

[1] *Gross, J. J. (1999). Emotion regulation: Past, present, future. Cognition & Emotion, 13(5), 551–573. https://doi.org/10.1080/026999399379186*

[2] *Gross, J. J. (2001). Emotion regulation in adulthood: Timing is everything. Current Directions in Psychological Science, 10(6), 214–219. https://doi.org/10.1111/1467-8721.00152*

[3] *Troy, A. S., Willroth, E. C., Shallcross, A. J., Giuliani, N. R., Gross, J. J., & Mauss, I. B. (2023). Psychological resilience: An affect–regulation framework. Annual Review of Psychology, 74(1), 547–576. https://doi.org/10.1146/annurev-psych-020122-041854*

[4] *Aldao, A. (2013). The future of emotion regulation research capturing context. Perspectives on Psychological Science, 8(2), 155–172. https://doi.org/10.1177/1745691612459518*

[5] *Monat, A., & Lazarus, R. S. (1999). Stress and coping: An anthology. Columbia University Press.*

[6] *Ferrari, J. R. (2010). Still procrastinating? The no regrets guide to getting it done. Wiley.*

[7] *Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. Psychological Bulletin, 133(1), 65–94. https://doi.org/10.1037/0033-2909.133.1.65*

[8] *Ferrari, J. R., Díaz–Morales, J. F., O'Callaghan, J., Díaz, K., & Argumedo, D. (2007). Frequent behavioral delay tendencies by adults. Journal of Cross–Cultural Psychology, 38(4), 458–464. https://doi.org/10.1177/0022022107302314*

[9] *Schouwenburg, H. C., & Lay, C. H. (1995). Trait procrastination and the big-five factors of personality. Personality and Individual Differences, 18(4), 481–490. https://doi.org/10.1016/0191-8869(94)00176-s*

[10] *Ferrari, J. R., & Olivette, M. J. (1994). Parental Authority and the development of female dysfunctional procrastination. Journal of Research in Personality, 28(1), 87–100. https://doi.org/10.1006/jrpe.1994.1008*

[11] Sirois, F., & Pychyl, T. (2013). Procrastination and the priority of short-term mood regulation: Consequences for future self. Social and Personality Psychology Compass, 7(2), 115–127. https://doi.org/10.1111/spc3.12011
[12] Sirois, F. M. (2023). Procrastination and stress: A conceptual review of why context matters. International Journal of Environmental Research and Public Health, 20(6), 5031. https://doi.org/10.3390/ijerph20065031
[13] Tice, D. M., Bratslavsky, E., & Baumeister, R. F. (2001). Emotional distress regulation takes precedence over Impulse Control: If you feel bad, do it! Journal of Personality and Social Psychology, 80(1), 53–67. https://doi.org/10.1037/0022-3514.80.1.53
[14] Tice, D. M., & Bratslavsky, E. (2000). Giving in to feel good: The place of emotion regulation in the context of general self-control. Psychological Inquiry, 11(3), 149–159. https://doi.org/10.1207/s15327965pli1103_03
[15] Blunt, A., & Pychyl, T. A. (2000). Task aversiveness and procrastination: A multi-dimensional approach to task aversiveness across stages of personal projects. Personality and Individual Differences, 24, 837–846.
[16] Lay, C. H. (1992). Trait procrastination and the perception of person–task characteristics. Journal of Social Behavior and Personality, 7, 483–494.
[17] Tykocinski, O. E., & Pittman, T. S. (1998). The consequences of doing nothing: Inaction inertia as avoidance of anticipated counterfactual regret. Journal of Personality and Social Psychology, 75(3), 607–616. https://doi.org/10.1037/0022-3514.75.3.607
[18] Taylor, J., & Wilson, J. C. (2016). Failing time after time: Time Perspective, procrastination, and cognitive reappraisal in goal failure. Journal of Applied Social Psychology, 46(10), 557–564. https://doi.org/10.1111/jasp.12383
[19] Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual–differences metric. Journal of Personality and Social Psychology, 77(6), 1271–1288. https://doi.org/10.1037/0022-3514.77.6.1271
[20] Denny, B. T., Inhoff, M. C., Zerubavel, N., Davachi, L., & Ochsner, K. N. (2015). Getting over it: Long-lasting effects of emotion regulation on amygdala response. Psychological Science, 26(9), 1377–1388. https://doi.org/10.1177/0956797615578863
[21] Waugh, C. E., Zarolia, P., Mauss, I. B., Lumian, D. S., Ford, B. Q., Davis, T. S., Ciesielski, B. G., Sams, K. V., & McRae, K. (2016). Emotion regulation changes the duration of the bold response to emotional stimuli. Social Cognitive and Affective Neuroscience, 11(10), 1550–1559. https://doi.org/10.1093/scan/nsw067
[22] Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well–being. Journal of Personality and Social Psychology, 85(2), 348–362. https://doi.org/10.1037/0022-3514.85.2.348
[23] Buhle, J. T., Silvers, J. A., Wager, T. D., Lopez, R., Onyemekwu, C., Kober, H., Weber, J., & Ochsner, K. N. (2013). Cognitive reappraisal of emotion: A meta-analysis of human neuroimaging studies. Cerebral Cortex, 24(11), 2981–2990. https://doi.org/10.1093/cercor/bht154
[24] Ray, R. D., McRae, K., Ochsner, K. N., & Gross, J. J. (2010). Cognitive reappraisal of negative affect: Converging evidence from EMG and self–report. Emotion, 10(4), 587–592. https://doi.org/10.1037/a0019015
[25] Garnefski, N., Kraaij, V., & Spinhoven, P. (2001). Negative life events, cognitive emotion regulation and emotional problems. Personality and Individual Differences, 30(8), 1311–1327. https://doi.org/10.1016/s0191-8869(00)00113-6
[26] Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. Journal of Personality and Social Psychology, 56(2), 267–283. https://doi.org/10.1037/0022-3514.56.2.267
[27] Zlomke, K. R., & Hahn, K. S. (2010). Cognitive emotion regulation strategies: Gender differences and associations to worry. Personality and Individual Differences, 48(4), 408–413. https://doi.org/10.1016/j.paid.2009.11.007
[28] Wang, Q., Fang, Y., Huang, H., Lv, W., Wang, X., Yang, T., Yuan, J., Gao, Y., Qian, R., & Zhang, Y. (2021). Anxiety, depression and cognitive emotion regulation strategies in Chinese nurses during the Covid–19 outbreak. Journal of Nursing Management, 29(5), 1263–1274. https://doi.org/10.1111/jonm.13265
[29] Balzarotti, S., Biassoni, F., Villani, D., Prunas, A., & Velotti, P. (2014). Individual differences in cognitive emotion regulation: Implications for subjective and psychological well–being. Journal of Happiness Studies, 17(1), 125–143. https://doi.org/10.1007/s10902-014-9587-3
[30] Sacchi, L., & Dan-Glauser, E. (2021). Never too late to plan: "refocus on planning" as an effective way to lower symptoms and difficulties in emotion regulation during the COVID-19 first lockdown. Emotion, 21(7), 1483–1498. https://doi.org/10.1037/emo0001039
[31] Min, J.A., Yu, J. J., Lee, C.U., & Chae, J.H. (2013). Cognitive emotion regulation strategies contributing to resilience in patients with depression and/or anxiety disorders. Comprehensive Psychiatry, 54(8), 1190–1197. https://doi.org/10.1016/j.comppsych.2013.05.008
[32] Lay, C. H. (1986). At last, my research article on procrastination. Journal of Research in Personality, 20(4), 474–495. https://doi.org/10.1016/0092-6566(86)90127-3

[33] Sirois, F. M., Yang, S., & van Eerde, W. (2019). Development and validation of the General Procrastination Scale (GPS-9): A short and reliable measure of trait procrastination. Personality and Individual Differences, 146, 26–33. https://doi.org/10.1016/j.paid.2019.03.039
[34] Zhang, Y. L., Li, S., & Yu, G. L. (2020). Reliability and validity test of the Short General Procrastination Scale in Chinese college students. Chinese Journal of Clinical Psychology, 28(3), 483–486.
[35] Wang, C., (2016). Time perspective: The revision of the inventory and the influence on risky driving behavior [Master's dissertation, Southwest University]. China National Knowledge Internet.
[36] Lü, H., & Du, G. (2017). Profiles of Zimbardo time perspective: Based on cluster analysis. Journal of Southwest University (Social Science Edition), 43(5), 97–104.
[37] Zhu, X. Z., Luo, F. S., Yao, S. Q., Auerbach, R.P., & Abela, R. Z. J. (2007). Reliability and validity of the cognitive emotion regulation questionnaire–Chinese version. Chinese Journal of Clinical Psychology, 15 (2), 121–131.
[38] Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford Press.
[39] MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding, and suppression effect. Prevention Science, 1, 173–181. https://doi.org/10.1023/A:1026595011371
[40] Ferrari, J. R. (1991). Compulsive procrastination: Some self–reported characteristics. Psychological Reports, 68(2), 455–458. https://doi.org/10.2466/pr0.1991.68.2.455
[41] Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive–behavioral correlates. Journal of Counseling Psychology, 31(4), 503–509. https://doi.org/10.1037/0022-0167.31.4.503
[42] Fee, R. L., & Tangney, J. P. (2000). Procrastination: A means of avoiding shame or guilt? Journal of Social Behavior & Personality, 15(5), 167–184.
[43] Blunt, A., & Pychyl, T. A. (2005). Project systems of procrastinators: A personal project–analytic and Action Control Perspective. Personality and Individual Differences, 38(8), 1771–1780. https://doi.org/10.1016/j.paid.2004.11.019
[44] Zhao, L. H., Zhao, X. P., Zhang, L. F., & Huang, Q. H. (2013). Association of cognitive emotion regulation with depression among nurses. Chinese Journal of Public Health, 29(6), 887–889. https://doi.org/10.11847/zgggws2013-29-06-35
[45] Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. Social and Personality Psychology Compass, 5(6), 359–371. https://doi.org/10.1111/j.1751-9004.2011.00355.x
[46] Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173
[47] Lei, H., Zhang, X., Cai, L., Wang, Y., Bai, M., & Zhu, X. (2014). Cognitive emotion regulation strategies in outpatients with major depressive disorder. Psychiatry Research, 218(1–2), 87–92. https://doi.org/10.1016/j.psychres.2014.04.025
[48] Martin, R. C., & Dahlen, E. R. (2005). Cognitive emotion regulation in the prediction of depression, anxiety, stress, and anger. Personality and Individual Differences, 39(7), 1249–1260. https://doi.org/10.1016/j.paid.2005.06.004
[49] Garnefski, N., & Kraaij, V. (2006). Relationships between cognitive emotion regulation strategies and depressive symptoms: A comparative study of five specific samples. Personality and Individual Differences, 40(8), 1659–1669. https://doi.org/10.1016/j.paid.2005.12.009
[50] Wilson, G. T. (1996). Acceptance and change in the treatment of eating disorders and obesity. Behavior Therapy, 27(3), 417–439. https://doi.org/10.1016/s0005-7894(96)80025-6
[51] Hussain, D., & Bhushan, B. (2011). Posttraumatic stress and growth among Tibetan refugees: The mediating role of cognitive–emotional regulation strategies. Journal of Clinical Psychology, 67(7), 720–735. https://doi.org/10.1002/jclp.20801
[52] Wohl, M. J. A., Pychyl, T. A., & Bennett, S. H. (2010). I forgive myself, now I can study: How self-forgiveness for procrastinating can reduce future procrastination. Personality and Individual Differences, 48, 803–808. https://doi.org/10.1016/j.paid.2010.01.029