Exploring Consideration of Future Consequences and Temporal Focus as Predictors of Emotion Regulation Choice

Madelaine R. Morton

Thompson Rivers University

Abstract

How people regulate their emotions greatly impacts their mental health. Therefore, it is crucial to understand how individual traits influence which emotion regulation strategies people choose to use and how effective they are. One trait, the consideration of future consequences (CFC), refers to the degree to which people take future outcomes into account when making decisions. Focusing on the future may increase the use of strategies that are beneficial in the long-term, such as reappraisal (thinking differently about a negative event to reduce unpleasant feelings), rather than using maladaptive strategies like distraction (thinking about something unrelated to the situation). However, few studies examine the link between emotion regulation and CFC using experiments which induce real emotions in people. The current study used a newly developed task to induce real regret. Subsequently, participants were directed to focus on either the long- or short-term consequences of their regret, before choosing to implement either reappraisal or distraction. I expected that a future focus would increase the choice of reappraisal over distraction, especially in those who were high, compared to low, in trait CFC. However, results did not indicate a significant relationship between CFC, temporal focus, and participants' ratings of strategy preference or their choice to implement one strategy over the other. These results are not in line with previous work in the area and may have been heavily influenced by an inadequate sample size.

Exploring Consideration of Future Consequences and Temporal Focus as Predictors of Emotion Regulation Choice

Successful management of emotion can mean the difference between a person flourishing or struggling with a mental disorder (Aldao & Nolen-Hoeksema, 2010). Recent research shows that individuals have an average of 15 different emotion regulation strategies in their repertoire to choose from when faced with a negative event in their day-to-day lives (Heiy & Cheavens, 2014). In fact, participants report using an average of seven different strategies in response to one negative event, although not all strategies are actually effective in regulating emotions (Heiy & Cheavens, 2014). Therefore, it is crucial to understand why people choose to regulate their emotions in different ways. In the current study, I examined how temporal focus and levels of trait consideration of future consequences predicted participants' emotion regulation choices.

While an individual may implement many different regulation strategies when faced with an emotional event, two strategies were explored in the current study: reappraisal and distraction. These strategies are among the most commonly studied in the area of emotion regulation and they are also known to be frequently used by individuals in daily life (Heiy & Cheavens, 2014). Reappraisal is a strategy in which the individual finds a way to think differently about an event in order to change how they feel about it. Thinking of a first date as a chance to see if you like the other person, rather than worrying about them evaluating you, would be an example of using this strategy. Reappraisal is a late selection antecedent-focused strategy which means that it is implemented before the emotional response fully unfolds, but after attending to an emotion-eliciting event (Sheppes & Gross, 2011). On the other hand, distraction involves thinking about something neutral and unrelated to the emotion-eliciting event such as imagining in detail yourself carrying out everyday tasks. This is an early selection antecedent-focused strategy,

which is also implemented before the emotional response fully unfolds, but it blocks the emotional meaning of an event from being processed (Sheppes & Gross, 2011).

The distinction between early and late selection strategies is important for understanding the consequences of emotion regulation. When an individual chooses to implement a certain strategy, it creates strain on that person's cognitive capacity. This results in competition between the creation of emotion and the process of the chosen regulation strategy to control the response of the person (Sheppes et al., 2014). Emotion regulation itself takes place in one of two ways: a disengagement from the emotion-eliciting stimulus (such as with distraction) or an engagement in the process of controlling those emotions (such as with reappraisal; Sheppes et al., 2014). Previous studies show that individuals tend to choose to use distraction when an event elicits intense emotions and reappraisal when an emotion-eliciting event is of lower intensity (Sheppes et al., 2014). Presumably, this is because reappraisal is a late selection antecedent-focused strategy, so the more intense an emotion-eliciting event, the more effort is required to regulate the resulting emotions (Sheppes & Gross, 2012). On the other hand, as an early selection antecedent-focused strategy, distraction is unaffected by the intensity of an emotional event as it requires little cognitive effort to implement (Sheppes & Gross, 2011). Distraction may be helpful in the short-term for regulating intense emotions but is thought to be maladaptive in the long-term because it prevents emotions from being fully processed (Sheppes & Gross, 2011). Research suggests that, while using distraction provides an immediate escape from experiencing emotion, this can perpetuate a cycle where the individual continually avoids the emotional situation and the feelings associated with it (Hayes et al., 2004). On the other hand, reappraisal is not as effective in regulating high-intensity emotions; however, it encourages the processing of emotions and is more adaptive in the long-term than distraction (Sheppes et al., 2014). For

example, studies show that individuals who use reappraisal in their daily lives show higher scores on measures of positive psychological functioning such as life-satisfaction, self-esteem, positive relationships, and personal growth, compared to individuals who tend to supress their emotions (Gross & John, 2003).

Given the differential long-term impacts of reappraisal and distraction, it is important to understand what variables (other than intensity) influence people's choice of one strategy over another. Many variables affect an individual's choice of emotion regulation strategy including perceived unfairness of the situation (Sakakibara & Endo, 2016), the presence of a personality disorder (Sauer et al., 2016), and age (Scheibe, Sheppes, & Staudinger, 2015). Another important predictor of emotion regulation choices is individual differences—that is, personality and other individual characteristics affect people's preferences for and use of emotion regulation strategies (Gross & John, 2003). One such trait, the consideration of future consequences (CFC), describes the degree to which individuals take future outcomes into account when making decisions. CFC predicts outcomes in domains such as healthy eating and exercise behaviour (van Beek, Antonides, & Handgraaf, 2013), but few studies have explicitly examined the relationship between CFC and emotion regulation. For example, Breuehlman-Senecal, Ayduk, and John (2016) found that people high in CFC were less likely to use the emotion regulation strategy of suppression (attempting to inhibit the outward expression of emotion). This fits with findings that suppression is not a long-term solution to managing emotions and actually results in higher negative affect over time (Gross, 1998). Furthermore, recent research on a broader range of emotion regulation strategies reported that people high in CFC tend to choose more adaptive strategies such as reappraisal and avoid more maladaptive strategies like substance abuse (Ortner, Chadwick, & Wilson, 2017). In addition, individuals high in CFC were more likely to

report higher levels of well-being compared with those low in CFC (Breuehlman-Senecal et al., 2016). While existing research on this topic suggests a link between trait CFC and emotion regulation choices, we still know very little about this relationship.

Psychologists have also examined how experimentally manipulated future focus can influence the outcome of emotion regulation. One study found that the intensity of negative emotions depends on whether one takes a long- or short-term focus (Boninger, Gleicher, & Strathman, 1994). Specifically, individuals high in CFC reported lower feelings of regret when they focused on the future rather than the immediate implications of a negative scenario. Participants low in CFC reported high levels of regret regardless of their temporal focus. In another study, individuals high in CFC were less likely to endorse aggressive actions than those low in CFC when there were potential future consequences for their actions (Joireman, Anderson, & Strathman, 2003). Conversely, participants low in CFC were less likely to endorse aggressive behaviours when there were immediate consequences for their actions. One mechanism that may explain these results is that individuals high in CFC are better able to implement strategies that enable them to learn from experience, such as reappraisal, especially when encouraged to think about the future. However, this hypothesis has not been tested empirically.

While progress is being made in this area of research, there are still many questions left unanswered. Examining the relationship between emotion regulation and individual characteristics, such as CFC, is especially important because it can provide insight into why some people lack the ability to employ effective regulation strategies and suffer as a result. Most studies on this topic have attempted to induce emotion in participants using written scenarios, in which the participant imagines themselves as the protagonist, rather than through a real emotion-

eliciting event (e.g., Boninger, Gleicher, & Strathman, 1994; Ortner, Chadwick, & Wilson, 2017). This makes it difficult to generalise the findings to other contexts and is problematic because a large body of research suggests that people are not good at predicting their own behaviour (e.g., Poon, Koehler, & Buehler, 2014). Therefore, the current study assessed the link between CFC and emotion regulation using a newly developed task to induce real regret in participants, a more ecologically valid approach. I predicted that individuals high in trait CFC, compared to those low in trait CFC, would be more likely to choose reappraisal over distraction. In addition, I hypothesized that participants who were prompted to focus on the future consequences of their regret would be more likely to choose reappraisal over distraction than participants given a present focus. Finally, I predicted an interaction between temporal focus and CFC, such that the effect of temporal focus would be largest for those high, compared to low, in trait CFC. The results may enhance our theoretical understanding of the construct of CFC and its role in emotion regulation. Furthermore, they may guide the development of tools to help individuals modify their emotion regulation habits and improve their psychological functioning.

Methods

Participants

Twenty-two students (seven men and 15 women) whose ages ranged from 18 to 41 (M = 22.67, SD = 6.27) enrolled in first-year introductory psychology classes at Thompson Rivers University participated in the study. All participants gave informed consent and a delayed debriefing took place after the completion of the study. Participants received 1% course credit in return for their participation in the study.

Design

This study was an experimental between-subjects factorial design. Participants were randomly assigned to one of two conditions — present or future focus. The second predictor, CFC, was included as a continuous variable.

Measures

Consideration of Future Consequences Scale (CFCS; Joireman, Schaffer, Balliet, & Strathman, 2012). This 14-item scale measures the degree to which individuals take future outcomes into account when making decisions (e.g., "I only act to satisfy immediate concerns, figuring the future will take care of itself." See Appendix A). Participants responded to each item on a 7-point scale (1 = *not at all like me,* 7 = *very much like me*). The CFCS has been shown to be internally consistent ($\alpha = .85$; Joireman, Anderson, & Strathman, 2003). Furthermore, scores on the CFCS are associated with participants' healthy eating and exercise behaviours, demonstrating predictive validity (Joireman et al., 2012)**.** Participants also completed the CFC-E which measures CFC specifically in terms of emotion regulation (e.g., "My immediate feelings are a big factor in the decisions I make or the actions I take;" See Appendix B). Participants responded to each of the 14 items on a 7-point scale (1 = *not at all like me,* 7 = *very much like me*). Data from the CFC-E were not included in the present analyses.

Cognitive Subscale of the Regret Elements Scale (RES; Buchanan, Summerville, Lehmann, & Reb, 2016). The cognitive items on the RES assessed participants' level of cognitive regret as a result of losing a game (e.g., "I wish I had made a different decision;" see Appendix C). Participants responded to five items on a 7-point scale (1 = *strongly disagree,* 7 = *strongly agree*). The emotional subscale of the RES was not included in the study as pilot testing indicated that the items were more suited to a situation of social regret (e.g., "I feel guilty" and "I

feel sorry"). The cognitive subscale of the RES has high internal consistency (α = .89; Buchanan et al., 2016). Furthermore, the subscale correlates highly (r = .79, $p < .001$; Buchanan et al, 2016) with other known measures of regret such as the Regret Index of the Regret and Disappointment scale (7 items; Marcatto & Ferrante, 2008). Among the items of the RES, I added two items designed to directly measure self-reported regret and self blame (e.g., "I feel regret" and "I blame myself for the outcome of the game"). Also included were two items to detect random responders (e.g., "For this answer, choose five" and "Select three as your answer"). There were also six filler items to disguise the purpose of the game (e.g., "I am satisfied with the choice I made").

Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski, Kraaij & Spinhoven, 2007). The CERQ assesses use of emotion regulation strategies in daily life such as rumination (e.g., "I dwell upon the feelings the situation has evoked in me;" See Appendix D). Subjects responded to the 36 items on a 5-point scale (1 = *almost never*, 5 = *almost always).* Data from the CERQ was not analyzed in the present report.

Emotion Regulation Implementation Questions. Participants responded to three questions examining how they implemented their emotion regulation strategy of choice. The first question asked participants to describe what they thought about in order to change their feelings (i.e., "Please write in a sentence or two how you took another perspective/distracted yourself. In other words, describe what you thought about to change your feelings"). The second question assessed the extent to which participants actually implemented their emotion regulation strategy of choice (i.e., "During the two-minute period, what percent of the time did you spend trying to take a different perspective – changing the meaning of the event so you felt less negative about it/ distracting yourself – thinking about something neutral that was completely unrelated?").

Finally, participants' levels of motivation to regulate their emotions was assessed on a nine-point scale (i.e., "How motivated were you to try to change your emotions?"; 1 = *not at all motivated,* 2 = *very motivated*).

Procedure

In the first part of the study, participants completed the CFCS (Joireman, Schaffer, Balliet, & Strathman, 2012) as well as the CFC-E online, prior to coming into the laboratory. Participants also answered some basic questions that allowed us to track their data across the two phases of the study but did not allow us to identify them.

In the second part of the study, participants came into the laboratory individually and completed the regret task (See Appendix E). Participants were told that they would receive $20 (Canadian) if they won a choose-your-own-adventure story but nothing if they lost. There were five sections of the story; after listening to each section, the participant answered a riddle to move on to the next part ("e.g., What has four legs but cannot walk?"). For the first four riddles, the participant chose from three possible answers (e.g., "A table, a camera, or a balloon"). No matter which answer the participants chose, they appeared to have selected the correct answer and would move on to the next part of the story. In the final riddle, participants responded to a question to which both possible answers sounded like they could be right, but neither actually was correct. No matter which answer the participant selected, they were told that they chose an incorrect response. Therefore, the story was rigged so that all participants lost after the fifth riddle. Participants then learned that they lost the game and did not win the money, thereby evoking feelings of regret about their last choice. In a pilot study designed to test the efficacy of this regret-induction task, participants reported significant feelings of regret on a single self-report item (M = 4.45, SD = 1.64), $t(19) = 12.15$, $p = <.001$, $d = 2.71$. Additionally, participants

reported significant feelings of regret on the cognitive subscale of the RES, (M = 5.05, SD = 1.55), $t(19) = 3.03$, $p = .007$, $d = 0.68$. Two out of the 22 participants guessed that the game was rigged in a manipulation check (approximately nine percent of the sample).

Next, participants were randomly assigned to one of two conditions to manipulate temporal focus. In the present focus condition, participants were told that "for ethical reasons, we need to ensure that you leave the lab without any lingering negative feelings." In the future focus condition, participants were told that "for ethical reasons, we need to ensure that you leave the lab without any lingering negative feelings in the long-term (in days or weeks to come)."

In order to control their feelings, participants then chose to either frame their regret in a positive way (reappraisal) or think about something neutral and unrelated to their regret (distraction; see Appendix F for full protocol). Participants read a brief description of both emotion regulation strategies and then rated their preference for one over the other on a 100-point sliding scale (e.g., "I definitely prefer to distract myself" vs. "I definitely prefer to take a different perspective"). The position of the anchors on the scale were counterbalanced (right or left) for participants in the present condition but not the future condition, due to a technical error. All responses were scored so that higher values reflected a greater preference for reappraisal. Participants then implemented their choice of strategy for two minutes. Participants' strategy choice (reappraisal or distraction) was the primary outcome of interest.

Participants rated the intensity of their regret using the cognitive subscale of the RES and two items designed to directly measure self-reported regret and self-blame. They then described how they regulated their emotions, completed the CERQ, and answered a series of manipulation checks (See Appendix G). Finally, participants were informed that they may provide their student email or receive the researchers' contact information to be fully debriefed after all data

for the study has been collected. This delayed debriefing was done in order to ensure that other potential participants did not discover the hypothesis of the study and bias results.

Results

The data of four participants who incorrectly answered the manipulation check which assessed if participants paid attention to the temporal focus manipulation were excluded from the analysis. Additionally, one participant was excluded from the analysis as their data could not be identified across the online and laboratory portions of the study based on their self-generated tracking ID. Altogether, we excluded five participants (approximately 23% of participants), leaving a sample size of 17. According to the manipulation checks, no participants guessed that the game was rigged to make them feel regret.

A multiple linear regression analysis was conducted to assess if temporal focus (present or future condition), CFC (as measured by the CFCS), and their interaction predicted participants' emotion regulation strategy preference for reappraisal or distraction (as rated on the 100-point scale, with higher scores reflecting a greater preference for reappraisal; See Table 1 for descriptive statistics). The analysis showed no significant main effect of participants' level of CFC on their emotion regulation strategy preference, $\beta = .076$, $t(14) = .283$, $p = .782$. There was also no significant main effect of temporal focus on emotion regulation strategy preference, $\beta = .174$, $t(14) = .649$, $p = .649$. Finally, there was no significant interaction between CFC, temporal focus, and strategy preference, $\beta = -.91$, $t(16) = -.524$, $p = .609$. Overall, these two variables and their interaction did not account for a significant proportion of variance in strategy preference ratings, $F(2,14) = .224$, $p = .80$, $R^2 = .031$.

I used logistic regression analysis to determine if temporal focus, CFC, and their interaction influenced participant's dichotomous strategy choice (for reappraisal or distraction). Again, analyses revealed no significant main effect of either CFC, odds ratio = .000, $p = .232$, or

temporal focus, odds ratio = .299, p = .303, on participants' dichotomous strategy choice between reappraisal or distraction. There was also no significant interaction between CFC, temporal focus, and participants' strategy choice, odds ratio = 5.53, p = .265. Fifty percent of participants in the future focus condition chose reappraisal compared to 66.67% of participants in the present focus condition. Overall, temporal focus, CFC, and their interaction did not account for a significant proportion of variance in participants' choice to implement one strategy over the other, odds ratio = .700, p = .469, df = 1.

Discussion

The present study aimed to examine the effect of trait CFC on emotion regulation choice between reappraisal and distraction when given either a present or a future temporal focus. Overall, analyses indicated that CFC and temporal focus did not predict either participants' dichotomous strategy choice or their preference ratings for one strategy over another. These results were not in line with the hypotheses or previous research which found that individuals high in CFC tend to choose more adaptive emotion regulation strategies (Breuehlman-Senecal, Ayduk, and John, 2016; Ortner, Chadwick, & Wilson, 2017), but may be due, in large part, to the study being underpowered.

The null results are not unexpected. I was unable to obtain the target sample size of 100 participants due to a lack of interest in the student population at Thompson Rivers University to participate in the study. With a small sample of only 17, the experiment lacked the required power to detect anything less than a large effect size. Future studies may attempt to replicate this study with an appropriate sample size.

Another limitation to this study is that participants may not have been strongly motivated to regulate their emotions. Participants were told that, for ethical reasons, they needed to have an

opportunity to regulate their emotions to ensure they were not experiencing any negative feelings as a result of the study. Although the regret-induction task was shown to induce regret in a pilot study, participants may not have experienced enough regret to feel the need to concentrate on regulating their feelings to alleviate the negative emotions. This may not have been a problem because participants reported non-zero feelings of motivation to regulate their emotions (M = 6.29, SD = 2.37, 1 = *not at all motivated*, 5 = *very motivated*). In addition, participants reported regulating their emotions for an average of about two-thirds of the allotted implementation time (M = 66.12, SD = 26.90, values represent the percentage of time spent regulating). However, these measures of motivation may be subject to demand characteristics as participants were told that the researchers needed them to manage their feelings for ethical reasons. One of the most discussed methodological concerns in emotion regulation research is that it is difficult to assess whether participants follow experimental regulation instructions (Bridges, Denham, & Ganiban, 2004). Previous research examined the extent to which participants followed instructions to use response-focused regulation strategies while viewing an unpleasant film, as verified by self-report and physiological measures (Demaree, Robinson, Pu, & Allen, 2006). Results showed that about half of participants reported using cognitive-focused strategies which contradicted instructions provided by the experimenter at least some of the time. This indicates that the issue of participants not following instructions is a potentially serious one. Subsequently, future work in this area may be able to provide a stronger manipulation by giving participants an intrinsic motivation for following instructions to regulate their regret. If participants believed that regulating their feelings would be beneficial to them in some way, it may inspire more careful selection of an emotion regulation strategy. For example, one study motivated participants to put

effort into regulating their emotions by telling them that the best regulators would win a monetary prize, as measured by their brain activity (Moser, Krompinger, Dietz, Simons, 2009).

An additional possible limitation to this study is that the manipulation of temporal focus in the current study may not have been very salient to participants. Participants were told either that we must ensure that they were not currently experiencing any negative feelings as a result of the study or that they must not experience any lingering feelings in the days or weeks to come. This distinction between a present or future focus may not have been very relevant to participants, particularly if those in the future condition did not believe there was a potential for feelings of regret to linger that long. Future studies may benefit by finding a way to create a stronger manipulation of temporal focus perhaps by creating salient consequences for participants' lingering feelings of regret in both the short and long-term conditions. For example, researchers may tell participants that any lingering negative feelings they have will negatively affect their performance in a subsequent task or in an aspect of their daily lives.

Finally, although a pilot study showed that the regret-induction game induced regret in participants, the task may not be appropriate for use in all emotion regulation research. For example, the monetary prize offered for winning the game may be less salient to other potential participants who have a higher income than our sample of university students. Simply increasing the amount of money offered may make the premise of the game seem less believable, so an incentive other than money may be useful in some studies. Furthermore, nine percent of participants in the pilot study sample were excluded from the data analysis because they figured out that the purpose of the game was to make them feel regret about their final choice in the game. This is a clear limitation of the regret task because it may compromise the external validity of any study which uses it; we cannot be sure that the findings of the study apply to

individuals who figure out that the game was rigged. Finally, other emotional responses that participants may have had as a result of the game, such as anger or frustration, were not measured in this study or the pilot study. In future research, it may be important to assess what other emotions participants might experience. However, if participants did experience emotions other than regret, the task would still be useful in examining the relationship between CFC, temporal focus, and emotion regulation. Past research has looked at these constructs in terms of emotions such as anger and frustration (e.g., Bruehlman-Senecal, Ayduk, & John, 2016; Joireman, Anderson, & Strathman, 2003). Furthermore, in complex real-life situations, it is unlikely that an individual will only experience one emotion in response to a negative event. Therefore, in the lab it would not be necessary to attempt to create a scenario where regret is the only emotion participants experience.

While the current study did not find a relationship between CFC, temporal focus, and emotion regulation strategy choice, there is still potential for an effect to be found in future work. The limitations of this experiment, particularly the small sample size, do not allow us to draw concrete conclusions from our results, so future work in this area is needed. Subsequent studies on this topic may find it valuable to use the regret-induction game developed for this study as it has been shown to reliably induce real regret in participants, while bearing in mind the limitations of the task.

References

Aldao, A. & Nolen-Hoeksema, S. (2010). Specificity of cognitive emotion regulation strategies: A transdiagnostic examination. *Behaviour Research and Therapy, 48*, 974-983. doi:10.1016/j.brat.2010.06.002

Boninger, D. S., Gleicher, F., & Strathman, A. (1994). Counterfactual thinking: From what might have been to what may be. J*ournal of Personality and Social Psychology, 67*(2), 297–307. doi:10.1037/0022-3514.67.2.297

Bridges, L. J., Denham, S. A., & Ganiban, J. M. (2004). Definitional issues in emotion regulation research. *Child Development, 75*(2), 340. doi:10.1111/j.1467-8624.2004.00675

Bruehlman-Senecal, E., Ayduk, Ö., & John, O. P. (2016). Taking the long view: Implications of individual differences in temporal distancing for affect, stress reactivity, and well-being. *Journal of Personality and Social Psychology, 111*(4), 610-635. doi:10.1037/pspp0000103

Buchanan, J., Summerville, A., Lehmann, J., & Reb, J. (2016). The Regret Elements Scale: Distinguishing the affective and cognitive components of regret. *Judgment and Decision Making, 11*(3), 275-286.

Demaree, H. A., Robinson, J. L., Pu, J., & Allen, J. B. (2006). Strategies actually employed during response-focused emotion regulation research: Affective and physiological consequences. *Cognition & Emotion, 20*(8), 1248-1260. doi:10.1080/02699930500405303

Garnefski, N., & Kraaij, V. (2007). The cognitive emotion regulation questionnaire:

Psychometric features and prospective relationships with depression and anxiety in adults. *European Journal of Psychological Assessment, 23*(3), 141–149. https://doi.org/10.1027/1015-5759.23.3.141

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2*(3), 271-299. doi:10.1037/1089-2680.2.3.271

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

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. doi:10.1037/0022-3514.85.2.348

Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., & ... McCurry, S. M. (2004). Measuring experiential avoidance: A preliminary test of a working model. *Psychological Record, 54*(4), 553-578.

Heiy, J. E., & Cheavens, J. S. (2014). Back to basics: A naturalistic assessment of the experience and regulation of emotion. *Emotion, 14*(5), 878-891. doi:10.1037/a0037231

Joireman, J., Anderson, J., & Strathman, A. (2003). The aggression paradox: Understanding links among aggression, sensation seeking, and the consideration of future consequences. *Journal of Personality and Social Psychology, 84*(6), 1287-1302. doi:10.1037/0022-3514.84.6.1287

Joireman, J., Shaffer, M., Balliet, D., & Strathman, A. (2012). Promotion orientation explains why future-oriented people exercise and eat healthy: Evidence from the two-factor consideration of future consequences-14 scale. *Personality and Social Psychology Bulletin, 38*(10), 1272-1287. doi: 10.1177/0146167212449362

Marcatto, F., & Ferrante, D. (2008). The regret and disappointment scale: An instrument for assessing regret and disappointment in decision making. *Judgment and Decision Making, 3*, 87–99.

Moser, J. S., Krompinger, J. W., Dietz, J., & Simons, R. F. (2009). Electrophysiological correlates of decreasing and increasing emotional responses to unpleasant pictures. *Psychophysiology, 46*(1), 17-27. doi:10.1111/j.1469-8986.2008.00721

Ortner, C. N. M., Chadwick, L., & Wilson, A. 2017. *Think ahead before you regulate: A focus on future consequences predicts choices of and beliefs about adaptive down-regulation of negative emotions.* Manuscript submitted for publication.

Poon, S., Koehler, D., & Beuhler, R. (2014). On the psychology of self-prediction: Consideration of situational barriers to intended actions. *Judgment and Decision Making, 9*(3), 207-225.

Sakakibara, R., & Endo, T. (2016). Cognitive appraisal as a predictor of cognitive emotion regulation choice. *Japanese Psychological Research, 58*(2), 175-185. doi:10.1111/jpr.12098

Sauer, C., Sheppes, G., Lackner, H. K., Arens, E. A., Tarrasch, R., & Barnow, S. (2016). Emotion regulation choice in female patients with borderline personality disorder: Findings from self-reports and experimental measures. *Psychiatry Research, 24*(2), 375-384. doi:10.1016/j.psychres.2016.04.113

Scheibe, S., Sheppes, G., & Staudinger, U. M. (2015). Distract or reappraise? Age-related differences in emotion-regulation choice. *Emotion, 15*(6), 677-681. doi:10.1037/a0039246

Sheppes, G., Scheibe, S., Suri, G., Radu, P., Blechert, J., & Gross, J. J. (2014). Emotion

regulation choice: A conceptual framework and supporting evidence. *Journal of Experimental Psychology. General, 143*(1), 163–81. https://doi.org/10.1037/a0030831

Sheppes, G., & Gross, J. J. (2011). Is timing everything? Temporal considerations in emotion regulation. *Personality and Social Psychology Review, 15*(4), 319–331. https://doi.org/10.1177/1088868310395778

van Beek, J., Antonides, G., & Handgraaf, M. J. (2013). Eat now, exercise later: The relation between consideration of immediate and future consequences and healthy behavior. *Personality and Individual Differences, 54*, 785-791. doi:10.1016/j.paid.2012.12.015

Table 1

Means and Standard Deviations for CFC and Preference Rating for Reappraisal Over Distraction for Present and Future Focus Conditions

	Temporal Focus			
	Present		Future	
	M	*SD*	*M*	*SD*
CFC Total	4.95	.78	4.65	.80
Preference Rating for Reappraisal	50.63	42.13	62.67	37.30

Appendix A

CFCS

CFC-14 Scale

For each of the statements shown, please indicate whether or not the statement is characteristic of you. If the statement is extremely uncharacteristic of you (not at all like you) please circle "1"; if the statement is extremely characteristic of you (very much like you) please circle "7." And, of course, use the numbers in the middle if you fall between the extremes.

1	2	3	4	5	6	7
Not at all like me						Very much like me

---

1. I consider how things might be in the future, and try to influence those things with my day to day behavior.

1	2	3	4	5	6	7
Not at all like me						Very much like me

2. Often I engage in a particular behavior in order to achieve outcomes that may not result for many years.

1	2	3	4	5	6	7
Not at all like me						Very much like me

3. I only act to satisfy immediate concerns, figuring the future will take care of itself.

1	2	3	4	5	6	7
Not at all like me						Very much like me

4. My behavior is only influenced by the immediate (i.e., a matter of days or weeks) outcomes of my actions.

1	2	3	4	5	6	7
Not at all like me						Very much like me

5. My convenience is a big factor in the decisions I make or the actions I take.

1	2	3	4	5	6	7
Not at all like me						Very much like me

6. I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes.

1	2	3	4	5	6	7
Not at all like me						Very much like me

7. I think it is important to take warnings about negative outcomes seriously even if the negative outcome will not occur for many years.

1	2	3	4	5	6	7
Not at all like me						Very much like me

8.I think it is more important to perform a behavior with important distant consequences than a behavior with less important immediate consequences.

1	2	3	4	5	6	7
Not at all like me						Very much like me

9.I generally ignore warnings about possible future problems because I think the problems will be resolved before they reach crisis level.

1	2	3	4	5	6	7
Not at all like me						Very much like me

10.I think that sacrificing now is usually unnecessary since future outcomes can be dealt with at a later time.

1	2	3	4	5	6	7
Not at all like me						Very much like me

11.I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date.

1	2	3	4	5	6	7
Not at all like me						Very much like me

12.Since my day to day work has specific outcomes, it is more important to me than behaviour that has distant outcomes.

1	2	3	4	5	6	7
Not at all like me						Very much like me

13.When I make a decision, I think about how it might affect me in the future.

1	2	3	4	5	6	7
Not at all like me						Very much like me

14.My behavior is generally influenced by future consequences.

1	2	3	4	5	6	7
Not at all like me						Very much like me

Appendix B

CFC-E

CFC-14-E Scale

For each of the statements shown, please indicate whether or not the statement is characteristic of you. If the statement is extremely uncharacteristic of you (not at all like you) please circle "1"; if the statement is extremely characteristic of you (very much like you) please circle "7." And, of course, use the numbers in the middle if you fall between the extremes.

1	2	3	4	5	6	7
Not at all like me						Very much like me

---

1. I consider how I might feel in the future, and try to influence those feelings with my day to day thoughts and behaviour.

1	2	3	4	5	6	7
Not at all like me						Very much like me

2. Often I engage in particular thoughts or behaviours in order to achieve feelings of well-being that might not result for quite some time.

1	2	3	4	5	6	7
Not at all like me						Very much like me

3. I only think or act to satisfy my immediate feelings of well-being, figuring the future will take care of itself.

1	2	3	4	5	6	7
Not at all like me						Very much like me

4. The way I think and behave is only guided by the immediate effects on my feelings.

1	2	3	4	5	6	7
Not at all like me						Very much like me

5. My immediate feelings are a big factor in the decisions I make or the actions I take.

1	2	3	4	5	6	7
Not at all like me						Very much like me

6. I am willing to sacrifice my immediate feelings of well-being in order to achieve beneficial future outcomes.

1	2	3	4	5	6	7
Not at all						Very much

like me like me

7. I think it is more important to do and think things that have favourable, distant consequences for how I feel, compared to things with less favourable, but immediate consequences for how I feel.

1 2 3 4 5 6 7
Not at all Very much
like me like me

8. I generally ignore the possibility of future problems because I think they will be resolved before they have a great influence on my feelings of well-being.

1 2 3 4 5 6 7
Not at all Very much
like me like me

9. Sacrificing my feelings of well-being now is usually unnecessary since future feelings can be dealt with at a later time.

1 2 3 4 5 6 7
Not at all Very much
like me like me

10. I only think or act to satisfy immediate feelings of well-being, figuring that I can take care of future problems that may occur at a later point in time.

1 2 3 4 5 6 7
Not at all Very much
like me like me

11. Since my day to day behaviour and thoughts have specific outcomes for my feelings, they are more important to me than behaviours that have distant outcomes.

1 2 3 4 5 6 7
Not at all Very much
like me like me

12. When I make a decision, I think about how it might affect how I feel in the future.

1 2 3 4 5 6 7
Not at all Very much
like me like me

13. My behavior is generally influenced by future consequences for my feelings of well-being.

1 2 3 4 5 6 7
Not at all Very much
like me like me

Appendix C

Regret Elements Scale

Now, please indicate how much you agree with each of the following items from 1 (Strongly Disagree) to 7 (Strongly Agree).

Some of these items will ask you to answer them in a very particular way, so be sure to read all of the items carefully and answer them as honestly and accurately as you can.

Press ENTER to proceed.

Regret Questions

1. I feel regret
2. I blame myself for the outcome of the game

Regret Elements Scale

6. would have gone better if I had chosen another option
7. I wish I had made a different decision
8. I should have decided differently
9. I would have been better off had I decided differently
10. Before, I should have chosen differently

Random Responding Questions:

1. Select three as your answer
2. For this answer, choose five

Filler questions:

1. I am satisfied with the choice I made.
2. I believe I made the best decision.
3. I have no regrets about my performance in the game.
4. I am happy with my choice in the game.
5. I feel glad.
6. I made the right choice.

All questions intermixed in the following order: RES10, FILLER1, REGRETQ1, RR1, RES8, FILLER3, FILLER4, RES6, RES7, FILLER5, RR2, RES9, FILLER6, REGRETQ2, FILLER2.

Appendix D

Cognitive Emotion Regulation Questionnaire

Instructions:

Everyone gets confronted with negative or unpleasant experiences and everyone responds to them in his or her own way. By the following questions, you are asked to indicate what you generally think, when you experience negative or unpleasant events. Please read the sentences below and indicate how often you have the following thoughts by circling the most suitable answer (1 = Almost Never, 5 = Almost Always).

1) **Self-blame**

1. I feel that I am the one to blame for it

10. I feel that I am the one who is responsible for what has happened

19. I think about the mistakes I have made in this matter

28. I think that basically the cause must lie within myself

2) **Acceptance**

2. I think that I have to accept that this has happened

11. I think that I have to accept the situation

20. I think that I cannot change anything about it

29. I think that I must learn to live with it

3) **Rumination**

3. I often think about how I feel about what I have experienced

12. I am preoccupied with what I think and feel about what I have experienced

21. I want to understand why I feel the way I do about what I have experienced

30. I dwell upon the feelings the situation has evoked in me

4) **Positive Refocusing**

4. I think of nicer things than what I have experienced

13. I think of pleasant things that have nothing to do with it

22. I think of something nice instead of what has happened

31. I think about pleasant experiences

5) **Refocus on Planning**

5. I think of what I can do best

14. I think about how I can best cope with the situation

23. I think about how to change the situation

32. I think about a plan of what I can do best

6) **Positive Reappraisal**

6. I think I can learn something from the situation

15. I think that I can become a stronger person as a result of what has happened

24. I think that the situation also has its positive sides

33. I look for the positive sides to the matter

7) **Putting into Perspective**

7. I think that it all could have been much worse

16. I think that other people go through much worse experiences

25. I think that it hasn't been too bad compared to other things

34. I tell myself that there are worse things in life

8) **Catastrophizing**

8. I often think that what I have experienced is much worse than what others have experienced 17. I keep thinking about how terrible it is what I have experienced

26. I often think that what I have experienced is the worst that can happen to a person

35. I continually think how horrible the situation has been

9) **Other-blame**

9. I feel that others are to blame for it

18. I feel that others are responsible for what has happened

27. I think about the mistakes others have made in this matter

36. I feel that basically the cause lies with others

Appendix E

Regret Task: Full Protocol

Experimenter: (Participant completes informed consent) “Thanks for coming in today, go ahead and have a seat at the computer. We are studying how money can affect performance in an attention game. First, we’ll have you play a game on the computer. Here is twenty dollars, if you succeed at the game you get to keep it; however, if you fail the game you don’t win any money. Does that make sense?” (Experimenter leaves the room; participant completes the task on the computer).

Instructions on the computer:

We are studying how money can affect performance in an attention game. First, you will play a game on the computer. If you succeed at the game, you will win a $20 bonus prize. However, if you fail the game you will not win a bonus prize.

This game is a choose-your-own-adventure style story. Each section of the story will be read aloud to you and there will be a question for you to answer. Your answer will determine what happens next in the story. Make sure you listen to each part of the story very carefully, as you will only hear it once. Remember, if you make a wrong choice and your character in the story fails the challenge, you will lose the $20 bonus prize.

Press ENTER to proceed.

You're an explorer walking through the rainforest searching for an ancient hidden temple rumoured to contain the treasure of the long-lost Aloidia-Ethosien tribe who used to inhabit the area. After hours of hiking through the forest you see the faint outline of a tower in the distance; you have found the sacred temple. After another twenty minutes of walking, you arrive at the entrance. You look for a way to open the door, but there's no handle and it seems to be locked. Suddenly words start to appear on the door, they read "What has four legs but cannot walk?". Below this, three buttons appear, each with an answer written on them. Which button do you press?

Button 1: Camera

Button 2: Table

Button 3: Balloon

You press the stone button and the door creaks open. You step inside and see a long hallway with vines growing on the sides of the walls. You turn on your flashlight and begin to make your way down the hall. After you've been walking for what feels like forever you come to a deep trench in the floor, twenty feet long with spikes at the bottom. There are three rope bridges crossing the pit. Just as you are wondering which bridge to choose you notice a question written on the floor in front of you: "What has a heart but no other organs?". In front of each of the bridges there is writing etched into the floor.

Bridge 1: Deck of cards

Bridge 2: Flower

Bridge 3: Pencil

You make your way carefully onto your chosen bridge. The boards under your feet seem steady and soon you are across the pit and back onto solid ground. After taking one last glance at the spikes below, you continue down the hallway. A few minutes later, you come to an intersection of three hallways. Suddenly, a mouse scurries your way and, much to your surprise, opens its mouth and says in a soft voice "What has to be broken before you can use it? If you can answer me this, I'll show you the way". He then lists three options.

Option 1: Pillow

Option 2: Clock

Option 3: Egg

As soon as you answer, the mouse takes off down the right hallway and you hesitantly follow. You manage to keep up with him and soon you come to the end of the hall and the mouse disappears into a hole in the wall. You're left staring at what seems to be a locked door with three keys hanging above it on a piece of wood bearing the warning "CHOOSE WISELY". Faintly, you hear a voice from behind the door say, "What falls but never gets hurt?". You notice that each key has a piece of paper attached to it with something written on it.

Key 1: Rain

Key 2: Mountain

Key 3: Ocean

You select the key and try it in the door, which easily opens. You step into a small room containing only one thing. A hole in the ground leading to what appears to be a chute. You realize the door behind you has disappeared. With nowhere else to go, you reluctantly climb into

the chute and descend into the darkness. After a short but harrowing ride, you pop out into a large, brightly lit room. Immediately, a glimmer catches your eye. In the middle of the room on the pedestal awaits a necklace with a giant emerald pendant; the treasure you've been looking for! Much to your horror a soft hissing sound reaches your ears and you realize that a massive snake is slithering at the base of the pedestal. Suddenly the snake hisses "There are three entrances to this temple. Only those who are part of the tribe who created this treasure would know which one to enter. When you first entered this sacred temple, what material was the door made of?" This should be easy, it was only an hour ago that you first entered the temple; however, right now your mind is racing and you can't quite remember…

When you first entered the temple, what material was the door made of?

Option 1: Wood

Option 2: Bronze

Option 3: Stone

As soon as you answer you have a bad feeling. "You chose wrong," the snake hisses as he lunges forward and that's the last thing you ever saw.

GAME OVER

Message on the computer after they lose:

Game over! Sorry, you made the wrong choice. You were so close, only one step away from winning the $20 bonus prize!

(Computer displays the participants' "attention score" as a meter filled up most of the way stating "Your attention score was very good at 80%. If you had just worked a little bit harder to pay attention you would have been able to keep the money!")

[After 15s, message on bottom of screen says]

"Please let the experimenter know you have finished this part of the study."

Appendix F

Full Emotion Regulation Choice Protocol

Experimenter: "I just have a couple more things for you to do. Please take a seat again."

(Participant returns to the computer).

[Experimenter presses S and reads Present/Future manipulation from computer screen]

Present Condition:
For ethical reasons, we need to ensure that you leave the lab. without any lingering negative feelings. To help you, I will give you a choice of ways to manage your emotions. So, please choose the strategy you believe will best help you to reduce your negative feelings. Then, I will ask you to fill out a short questionnaire that asks about your feelings.

Future Condition:
For ethical reasons, we need to ensure that you leave the lab. without any lingering negative feelings in the long-term (in days or weeks to come). To help you, I will give you a choice of ways to manage your emotions. So please choose the strategy that you believe will be most helpful to reduce your negative feelings in the long-term. A week from now, I will email you a short questionnaire that asks about your feelings.

[EXPERIMENTER LEAVES]
[NEW SCREEN]

Here are a couple of different strategies that you can use to control your emotions. Please read through each strategy description carefully. Then, choose just ONE strategy, whichever you prefer. You will then implement that strategy for the next two minutes.

"Take A Different Perspective"

Think of different ways to change the meaning of the event to change how you feel. E.g., "It's not so bad in the grand scheme of things," or "What have I learned from this experience?" Do your best to keep focused on the event but think about it in different ways to help you feel less emotional.

"Distract Yourself"

Think about something completely neutral (neither pleasant or unpleasant) and unrelated to the event to change how you feel. E.g., imagine your neighbourhood in great detail, or imagine yourself doing everyday tasks in detail. Think about something completely neutral to help you feel less emotional.

Present:
Remember, choose the strategy that you believe will best help you to reduce your negative feelings immediately.

Future:
Remember, choose the strategy that you believe will best help you to reduce your negative feelings in the long-term (in days or weeks to come).

[NEW SCREEN]

Before you make your choice , please rate your preference for one or the other, using the following scale: …. (Counterbalance which side these are on)
I definitely prefer to **distract myself** I definitely prefer to **take another perspective**
0----------100

[NEW SCREEN]

Now please make your choice. Do your best to implement that strategy, and only that strategy, for the next two minutes. Click on either the "Take A Different Perspective" button or the "Distract Myself" button below, when you are ready.

(The participant chooses and the computer counts down two minutes. On the screen there is a short reminder of the strategy they chose.)

"Take A Different Perspective": Change how you think about the event so that you feel less emotional about it.

"Distract Myself": Think about something neutral and unrelated to the event so that you feel less emotional about it.

(The computer lets them know when their time is up, and participants then fill out the questionnaire on the computer.)

Appendix G

Manipulation check

1. Before the game started, what did you believe was the likelihood of your winning the $20?

0----------100%

2. How motivated were you to do well in the game?

0	1	2	3	4	5
Not at all motivated					Very motivated

3. How much control did you feel that you had over the outcome of the game?

0	1	2	3	4	5
No control					Full control

4. While you were playing the choose-your-own adventure game, what did you think was the purpose of the game?

_____

5. From the options below, what did you think was the primary purpose of the game, while you were playing it? Choose as many as you think may apply.

A. to make me feel bad about my choices during the game

B. to test my memory and recall of novel information

C. to test the effects of money on my attention to the game

D. to test my knowledge of obscure historical facts

6. When were you told you would be asked about your feelings? Select one:

A. In a few minutes

B. In several days