

Feeling Good About the Bad: Making Positive Appraisals of Predominantly Negative Stressors

Christian E. Waugh, Marquis Schieber, and Yifang Zhao
Department of Psychology, Wake Forest University

People often experience positive emotions during predominantly negative stressors, and we hypothesize that one way this occurs is that people make positive appraisals of some elements of the stressors. Further, we hypothesized that people can use these positive appraisals to spontaneously and/or strategically regulate their stress responses. In several studies with online and subject pool convenience samples, participants were able to generate unambiguously positive appraisals (as defined in pilot Studies 2 and 3) of elements of predominantly negative stressors both when instructed to generate positive appraisals (Study 1) and when instructed to just list elements of their stressors with no instruction on what valence they should be (Studies 3–6). Further, just generating these positive appraisals helped participants feel better about a prolonged life stressor (Studies 4 and 6) and an acute laboratory stressor (Study 5). We successfully distinguished the emotion regulation strategy of positive “up-appraisal” (elaborating and focusing on positive appraisals) from that of positive “alt-appraisal” (reframing and changing a negative appraisal to be more positive) and showed that positive up-appraisal was more effective at improving stress-related emotions (Studies 1 and 4). Last, individual differences in positivity and negative emotionality were the most reliable predictors of generating positive appraisals of stressors. These studies demonstrate that sometimes, people can cope successfully with stressors because they are able to separate elements of that stressor, recognize that some of those elements are positive, and then elaborate and focus on those positive appraisals.

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People often experience positive emotions during stressful situations. Indeed, some stressors are predominantly positive (i.e., eustress; Nelson & Simmons, 2003) but are considered stressful because they are challenging and require energy and attention to cope with. Positive emotions also often occur during predominantly negative stressors (Folkman, 1997, 2008; Waugh, 2020)—those situations that are accompanied primarily by feelings of threat, negative emotions, and are perhaps difficult to cope with (Fredrickson, 1998; Waugh et al., 2023). For example, during the COVID-19 pandemic, researchers found that frontline health care workers experienced positive and negative emotions simultaneously during their work (Sun et al., 2020). This pattern was also found in caregivers of people with chronic illnesses (Folkman et al., 1994; Waugh et al., 2020) and in the wake of the terrorist attacks on 9/11 (Fredrickson, 1998).

Although it is well-established that people can experience positive emotions even during predominantly negative stressors, it is still not well understood how these positive emotions are generated. Most studies examining this question assess people’s positive and negative emotional experiences during or judgments about the stressor as a whole (e.g., “To what degree do you feel positive/negative emotions during/about the COVID pandemic?”). Providing judgments about a stressor holistically treats it as a homogenous experience, whereas it is clear that stressors, especially complex ones, consist of several different elements (Lazarus & Folkman, 1984). For example, the COVID-19 pandemic was stressful because of isolation, potential sickness, actual sickness, uncertainty about what is happening, etc.

We propose that to better understand how people generate positive emotional responses to or during stressors, it is imperative to understand

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Christian E. Waugh  <https://orcid.org/0000-0002-7871-5845>

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Correspondence concerning this article should be addressed to Christian E. Waugh, Department of Psychology, Wake Forest University, 1834 Wake Forest Road, Winston Salem, NC 27109, United States. Email: waughce@wfu.edu

their appraisals of separable elements of the stressor. Appraisals are evaluations of environmental stimuli/events with respect to the motivational relevance of the stimulus/event to a person's well-being (Folkman et al., 1986; Scherer & Moors, 2019). In this study, we focus particularly on positive and negative appraisals, which are those evaluations of events that reflect current/improving well-being or reflect current/deteriorating well-being, respectively (Ellsworth, 2013; Kalisch et al., 2014). In appraisal theories of emotion, it is these positive appraisals that can induce the positive feelings in positive emotions (Scherer & Moors, 2019). Therefore, positive appraisals of elements of stressors are a potential origin of positive emotions about/during that stressor.

There are challenges to this formulation that positive appraisals of elements of negative stressors are what produce positive emotions to those stressors. First, if these are predominantly negative stressors, it may be unlikely that people form positive appraisals of elements of them. Perhaps instead, people feel positive emotions during negative stressors because they manage to successfully distract themselves from the stressor by doing something positive but unrelated to the stressor, which would not necessarily reflect a positive appraisal of the stressor itself (e.g., Waugh et al., 2020). Alternatively, perhaps people initially appraise the elements of a stressor as negative and only with effort and motivation are they able to reappraise those elements of the stressor as positive to feel better (McRae & Mauss, 2016; Shiota & Levenson, 2012).

In the following studies, we had four research aims that address these challenges and test the overarching formulation that one way people feel positive during stress is because they make positive appraisals of some elements of the stressor (see Table 1 for outline of research aims, findings and studies). Our *Research Aim 1* was to show that when given the opportunity to break down their predominantly negative stressor into its constituent elements, people can and do spontaneously (i.e., without instruction by the experimenter) appraise some of those elements as positive (Studies 3–6). Our *Research Aim 2* was to test the hypothesis that generating these positive appraisals of elements of negative stressors contributes to their positive emotions about those stressors (Studies 4–6).

We also examined whether people can strategically/intentionally use these positive appraisals to help them feel better about the stressor. In the emotion regulation (ER) literature, the construct “reappraisal” captures the processes by which people change their appraisals of an emotional event to feel different about it (McRae, Ciesielski, & Gross, 2012) with positive reappraisal specifically involving the goal to feel more positive about the emotional event (McRae & Mauss, 2016). Positive reappraisal of a multielemental event may take different forms, however, depending on the valence of the initial appraisal of the specific element of that event that is the focus of reappraisal (Figure 1). If the initial appraisal of the stressor element being shaped is positive, as we have suggested above that it could be, then positive reappraisal of the overarching stressor would entail elaborating and focusing on that positive appraisal rather than necessarily changing the meaning of it (Quoidbach et al., 2015). For example, when someone wanted to feel better about the COVID-19 pandemic, they could have first thought of something genuinely positive about it—like getting to spend more time with their family—and then elaborated on that initial positive appraisal by focusing on and reimagining that family time (e.g., author CW and his family decided spontaneously to build a fire pit together during COVID-19, which would not have happened otherwise). Alternatively, if the initial appraisal of

Table 1

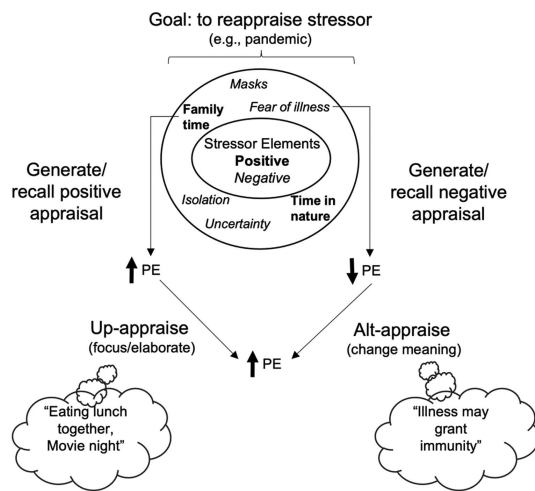
Outline of Primary Research Aims and Findings Across All Six Studies

Research aim	Study 1	Study 2	Study 3	Study 4	Study 5	Study 6
1. To show that people generate positive appraisals of stressors						
When instructed	Yes	Yes	Yes	Yes (PE, NE)	Yes (PE, NE)	Yes (PE, NE)
Spontaneously						
2. To test hypothesis that generating positive appraisals improves stress-related emotions						
3. To show that positive up-appraisal is distinct from positive alt-appraisal in Preference	Up > Alt Up > Alt (PE) PosApp > NegApp			Up = Alt Up > Alt (PE, NE)		
Effectiveness						
Effort required						
4. To explore individual differences that predict generation of positive appraisals during stress			PosApp > NegApp			
						Positivity (+), Negative emotionality (–).

Note. PE = positive emotion; NE = negative emotion; Up = up-appraisal; Alt = alt-appraisal; PosApp = positive appraisal; NegApp = negative appraisal; + = positive relationship; – = negative relationship.

Figure 1

A Model of How the Up-Appraisals of Positive Elements and Alt-Appraisals of Negative Elements May Work Differently to Improve Positive Emotion (PE) to Stressors



Note. Up and down arrows reflect increases or decreases, respectively. PE = positive emotion.

the stressor element is negative, then for reappraisal to make it more positive would require changing the meaning of the stressor element. If the element someone focused on when thinking about the COVID-19 pandemic is about all the negative consequences of possibly getting ill, they could have changed the meaning of getting ill by thinking about positive consequences—how getting ill could have built immunity to COVID-19. We are unsure of whether there are already terms that adequately distinguish these two facets of positive reappraisal given that terms like benefit-finding (Shiota & Levenson, 2012) is often used to describe either of these reappraisal facets as described above. Therefore, at least for the purposes of this article, we feel compelled to introduce the terms “positive up-appraisal” to refer to when people reappraise an overarching stressor by focusing/elaborating on an initial positive appraisal of some stressor element and “positive alt-appraisal” to refer to when people reappraise an overarching stressor by changing the initial negative meaning/appraisal of some stressor element to an alternative meaning/appraisal (Figure 1).

Therefore, our *Research Aim 3* was to show that positive up-appraisal may be distinct from positive alt-appraisal. We examined whether people recognize these strategies as distinct (Study 4), whether people differentially prefer to use one strategy or the other (Studies 1 and 4), whether one strategy is more effective at improving stress-related emotions than the other (Studies 1 and 4), and whether more effort is required to enact one or the other (Studies 1 and 3). Last, our *Research Aim 4* was to examine possible individual differences that could predict the generation of positive appraisals during stress (Study 6). Notably, for the purposes of this article, we are treating these strategies as potentially distinct, but it is also probably that they are often used in sequence—with people first alt-appraising a negative appraisal into a positive one and then up-appraising that new positive appraisal.

Transparency and Openness

Notably, we have compiled a set of studies that test these overarching research aims, which were present at the very beginning of our investigation. However, what we learned from later studies greatly impacted our understanding of the earlier studies. We present these studies chronologically given that it will be easiest to understand, and we will present the hypotheses that we made at the time of that study; however, we will also try to tell a coherent story of the studies in which we address our research aims as explained above.

We report how we determined our sample size (except for pilot Studies 2 and 3), all manipulations, and all measures in the study, and we follow Journal Article Reporting Standards (Appelbaum et al., 2018). All data and analysis code are available at <https://osf.io/tf8ym/>. Studies 1 (<https://osf.io/6ybxnd>) and 4 (<https://osf.io/btqkz>) were preregistered (Waugh & Schieber, 2025).

Study 1: Preliminary

We conducted Preliminary Study 1 first, before our thinking on positive appraisal during stress had fully matured. Therefore, it does not yet answer some of the basic questions we outlined above. We present it here, however, because we made design/power/hypothesis choices later based on these findings. Essentially, in this study, we first wanted to demonstrate that people can generate positive appraisals of predominantly negative stressors (Research Aim 1) and that the strategies of positive up-appraisal and positive alt-appraisal are associated with different predictors, effects and preferences (Research Aim 3). This study was preregistered (<https://osf.io/6ybxnd>).

In this study, participants were asked to generate positive and negative appraisals of elements of a stressor. They were then asked to choose to either elaborate and focus on one of their positive appraisals (positive up-appraisal) or to reframe one of their negative appraisals (positive alt-appraisal). We originally hypothesized that extraversion might predict the choice to use positive up-appraisal because the relationship between extraversion and positive emotionality (Costa & McCrae, 1980) might make it more alluring for those high in extraversion to choose to focus on the positive elements of stressors (H1). We also originally hypothesized that neuroticism would predict the choice to use alt-appraisal given that the relationship between neuroticism and negative emotionality (Costa & McCrae, 1980) might make it easier to focus on the negative appraisals of the stressor (H1). Relatedly, we also hypothesized that greater stressor intensity would predict the choice of alt-appraisal for a similar reason—that it would be easier to generate and then focus on the negative appraisals of the intense stressors than it would be to focus on the presumably weaker positive appraisals of the intense stressors (H2). Notably, we later conducted a much more well-informed and thorough investigation of individual differences in predicting positive appraisals in Study 6.

We also aimed to explore whether there were different effects of using positive up-appraisal and positive alt-appraisal (Research Aim 3). Participants reported their positive and negative emotions before and after using these regulatory strategies. Positive reappraisal has shown to be a highly successful ER strategy—often producing strong increases in positive emotions and usually decreases in negative emotions as well (McRae & Mauss, 2016; Waugh et al., 2022). Given that we believe that sometimes people in

those positive reappraisal studies are actually using positive up-appraisal instead and that generating positive appraisals produces positive emotions (Grandjean & Scherer, 2008), we hypothesized that there would be similarly strong increases in positive emotions (H3) and decreases in negative emotions (H4) when people use positive up-appraisal as when they use positive reappraisal.

Last, alt-appraisal involves attempting to change an initial negative appraisal into a less negative or positive appraisal, which requires a great deal of top-down cognitive control including inhibition, working memory, etc. (McRae, Jacobs, et al., 2012). Therefore, we also hypothesized that alt-appraisal would take more effort (Sheppes & Meiran, 2008) than would positive up-appraisal, which just requires elaboration and not the cognitive control that is required to change an appraisal (H5; Research Aim 3).

Method

Participants

One hundred eight participants (60 females) were initially recruited from the Introductory Psychology research participation pool to participate in a study on thinking about stress. Eighty-three participants identified as White, nine identified as Hispanic, six identified as African American, 14 identified as Asian, and five identified with more than one race/ethnicity. To be eligible, participants had to be between the ages of 18 and 55 years old ($M = 18.99$, $SD = 0.94$) because of established changes in how people regulate their emotions as they age (Young et al., 2021), speak fluent English, and reside in the United States. Thirteen participants were excluded from data analyses for preregistered exclusion criteria including lack of response diversity (they listed the same elements of their stressor or same responses to the personality questionnaire, $n = 5$) or they failed to follow instructions (did not list two elements for each instruction, $n = 8$), leaving 95 participants.

Preregistered Sample Size Justification

Based on a power analysis to achieve 95% power to detect an odds ratio of 3.0 because our original primary hypothesis was based on regulation choice (up-appraisal vs. alt-appraisal) and prior studies have found that the odds ratio of some predictor (like stressor intensity) on regulation choice (like distraction vs. reappraisal) falls in between 2.21 and 4.27 (Martins et al., 2018), a minimum sample size of 80 participants was required. We overrecruited to account for potential missing data.

Materials

Emotional State. Throughout the task, participants were asked to report their current positive and negative emotion ("Please report your current emotional state") on separate one-item measures of each emotion: "How positive (negative) do you feel right now" using a scale from 0 (*not at all*) to 10 (*very*).

Personality. Participants completed the extraversion ($\alpha = .84$) and negative emotionality ($\alpha = .91$) subscales of the Big Five Inventory-2 (Soto & John, 2017). Each subsection consists of 12 items to which participants rated their agreement using a 5-point scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). Example items include "Is outgoing, sociable" (extraversion) and "Is moody, has up and down mood swings" (negative emotionality).

Stress Up-Appraisal/Alt-Appraisal Task

Stressor Description. Participants first wrote a description of a recent COVID-19-related stressful event: "Think of one recent COVID-related stressful event that you are currently dealing with. In the next section please describe this stressor fully." We chose this wording to allow people to report on fairly complex stressors related to COVID-19 that have been ongoing for at least some time but are recent enough that they are still ongoing.

Stressor Intensity. Participants reported the intensity of their stressor on four items (based on Brehm, 1999). On a scale of 0 (*not at all*) to 10 (*very*), participants reported on: "How difficult is it to manage your stressor?" "How intense is your stressor?" "How much has this stressor impacted your life?" and "How important is this stressor?" The scores for the four items were averaged for an overall score for stressor intensity ($\alpha = .82$).

Stress Appraisals. Participants were then asked to identify and describe two positive and two negative aspects of their COVID-19-related stressor. The order of positive and negative aspects was randomly generated.

Emotion Regulation Choice. After providing stress appraisals, participants made a choice to use one of two strategies to make themselves feel better about their COVID-19 stressor: positive up-appraisal or positive alt-appraisal. Positive up-appraisal was described as "In one strategy you can focus on the positive aspects of your stressor that you listed before to make yourself feel better." Positive alt-appraisal was described as "In the other strategy you can focus on the negative aspects of your stressor that you listed before and reinterpret or reframe them to be more positive."

Implementing Emotion Regulation. After choosing one of either positive up-appraisal or positive alt-appraisal, participants were shown either the positive appraisals that they had provided (up-appraisal) and told to "elaborate on and describe fully these positive aspects" or shown the negative appraisals that they had provided (alt-appraisal) and told to "elaborate on and describe fully these positive reinterpretations/reframings." They then provided written descriptions of these up-appraisals or alt-appraisals they generated to each of the positive or negative appraisals that they had previously provided.

Effort Rating. Participants were asked to rate on a scale of 0 (*not at all*) to 10 (*very*), how effortful they found identifying the positive and negative aspects of their stressor, how effortful it was to use their chosen strategy to make themselves feel better, and how effortful they think it would have been to use their unchosen strategy to make themselves feel better.

Procedure

Participants completed the survey online through their Introductory to Psychology SONA accounts. Once they registered for the study, participants were provided a link to the study survey in Qualtrics. After electronically signing the informed consent form, they completed a short demographic measure about their age, race, ethnicity, gender, education level, and family income level. They then reported their baseline emotional state. They then completed the stressor description task and reported their stressor intensity. Next, they reported their poststressor emotional state. Then, participants reported their stressor appraisals, chose a regulatory strategy, and implemented that strategy. Next, they reported their postregulation emotional state. Last, they

reported how effortful the task was and completed the personality scales. At the end of the survey, participants were redirected to the SONA website. Each participant was granted 0.5 credits for taking the 30-min survey. The Wake Forest University Institutional Review Board approved this procedure.

Results

Descriptives and Manipulation Checks

Qualitative Examples. A good example of positive up-appraisal was provided by a participant whose initial positive appraisal was “I was able to spend more time with my family,” which they up-appraised by elaborating on it:

I would not have been able to spend this much time at my beach house with my parents and sister. I was also able to see all my cousins, aunt and uncles and grandparents. It was also very nice and relaxing.

Alternatively, a good example of a positive alt-appraisal was provided by a participant whose initial negative appraisal was “not having spending money,” which they alt-appraised by changing the meaning to “This means I will not be as focused on objects and can focus on my thoughts and friends more.”

Choice Frequency. Participants significantly preferred to use positive up-appraisal ($n = 78$, 82.1%) than to use positive alt-appraisal ($n = 17$, 17.9%) to make themselves feel better, $\chi^2(1, 95) = 39.17$, $p < .001$, Fisher’s Exact Test = .64.

Stress Manipulation. Paired t tests revealed that participants reported increased negative emotion from baseline ($M = 3.45$, standard error [SE] = .21) to poststress ($M = 4.06$, $SE = .22$), $t(91) = 4.46$, $p < .001$, 95% confidence interval (CI) [.33, .86], $d = .29$, and decreased positive emotion from baseline ($M = 6.36$, $SE = .19$) to post-stress ($M = 5.82$, $SE = .20$), $t(94) = -4.76$, $p < .001$, 95% CI [-0.76, -0.31], $d = -.49$, supporting that our procedure appropriately induced stress responses that could then be regulated.

Preregistered Analyses

Predictors of Regulation Choice. We tested whether personality and/or the intensity of the stressor would predict participants’

choice of using positive alt-appraisal or positive up-appraisal to feel better about their stressor. Using binomial logistic regression, we found that neither extraversion, $B = 0.18$, $SE = .40$, $t(89) = 0.441$, $p = .659$, $\beta = 0.12$, 95% CI [-0.42, 0.68]; neuroticism, $B = -0.39$, $SE = .33$, $t(88) = -1.17$, $p = .24$, $\beta = -0.33$, 95% CI [-0.89, 0.21]; nor the intensity of the stressor, $B = 0.09$, $SE = .14$, $t(94) = 1.24$, $p = .518$, $\beta = 0.17$, 95% CI [-0.36, 0.71] were significant predictors of regulation strategy choice.

Effects of Regulation Choice on Emotion. We next tested whether regulation choice impacted participants’ emotional states from after stress to after regulation. We conducted two 2 (ER choice: positive alt-appraisal, positive up-appraisal) \times 2 (phase: poststress, postregulation) analyses of covariance with positive and negative emotion as the dependent variables (in separate analyses) and baseline positive and negative emotion as covariates, respectively.

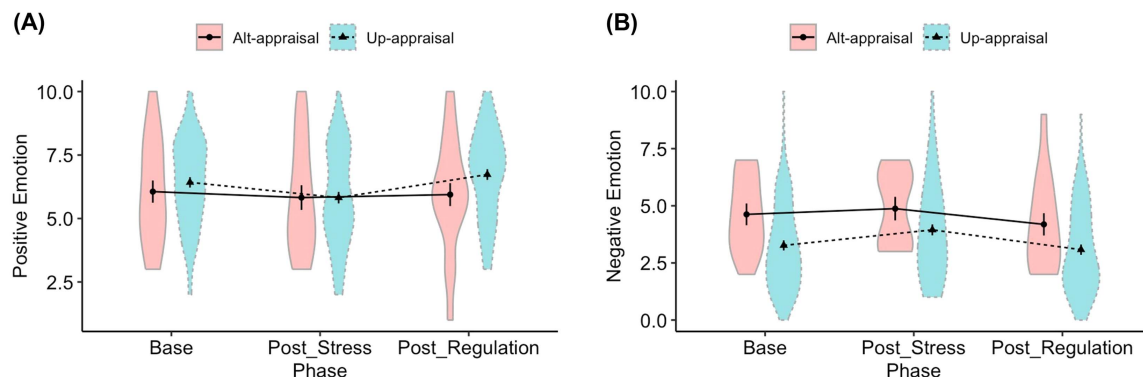
For positive emotion, there was a significant main effect of Phase, $F(1, 92) = 8.67$, $p = .004$, $\eta_p^2 = .086$, and a nonsignificant effect of ER choice, $F(1, 92) = 0.09$, $p = .761$, $\eta_p^2 = .001$, which were qualified by an interaction of Phase and ER choice, $F(1, 92) = 6.14$, $p = .015$, $\eta_p^2 = .063$ (Figure 2A). Follow-up contrast tests indicate that for those who chose to use positive up-appraisal, their positive emotion significantly increased from poststress ($M = 5.76$, $SE = .12$) to postregulation ($M = 6.68$, $SE = .14$), $t(92) = 6.42$, $p < .001$, 95% CI [0.64, 1.2], whereas for those who chose to use positive alt-appraisal, there was not a significant change from poststress ($M = 6.10$, $SE = .27$) to postregulation ($M = 6.18$, $SE = .29$) positive emotion, $t(92) = 0.25$, $p = .800$, 95% CI [-0.53, 0.69].

For negative emotion, there was a significant main effect of Phase, $F(1, 88) = 16.59$, $p < .001$, $\eta_p^2 = .159$, nonsignificant effects of ER choice, $F(1, 88) = 0.18$, $p = .669$, $\eta_p^2 = .002$, and the interaction of Phase and ER choice, $F(1, 88) = 0.35$, $p = .556$, $\eta_p^2 = .004$ (Figure 2B). Thus, across both ER choice groups, there was a similar trend toward less negative emotion from poststress ($M = 4.03$, $SE = .18$) to postregulation ($M = 3.27$, $SE = .16$), $t(88) = 4.10$, $p < .001$, 95% CI [0.39, 1.13].

Effort of Strategies. We found that those who chose to use alt-appraisal did not judge it as more effortful ($M = 5.12$, $SE = .60$) than those who chose to use up-appraisal ($M = 5.08$, $SE = .26$), $t(22.31) = 0.06$, $p = .951$, 95% CI [-1.31, 1.39], $d = .03$.

Figure 2

Study 1: Effects of Positive Up-Appraisal and Reappraisal on Positive Emotion (A) and Negative Emotion (B)



Note. See the online article for the color version of this figure.

Exploratory Analyses

Effort of Providing Appraisals. Although we did not find differences in the effort of using alt-appraisal or up-appraisal, these strategies occurred after participants already spent some amount of effort generating appraisals of the stressor in the first place. It is possible, therefore, that there is a difference in the effort to generate a positive versus negative appraisal of a stressor, which then might conceptually “add” to the overall effort of engaging in the up-appraisal and alt-appraisal strategies, respectively. Indeed, participants reported that it was significantly more effortful to generate positive appraisals ($M = 5.28$, $SE = .23$) than to generate negative appraisals ($M = 3.68$, $SE = .28$) of their stressor, $t(94) = 4.66$, $p < .001$, 95% CI [0.92, 2.28], $d = .48$. This suggests that, contrary to our hypotheses, it may be more effortful overall to generate positive appraisals of a stressor and then to up-appraise them than it is to generate negative appraisals that one then alt-appraises. Perhaps expectedly, stressor intensity was positively related to how effortful it was to generate positive appraisals, $B = 0.31$, $t(93) = 2.76$, $p = .007$, $\beta = 0.28$, 95% CI [0.08, 0.47], but was unrelated to the effort to generate negative appraisals, $B = -0.12$, $t(93) = -0.82$, $p = .414$, $\beta = -0.08$, 95% CI [-0.29, 0.12].

Discussion

Our overarching goal with these studies was to show that people can make positive appraisals of predominantly negative stressors when instructed and that they can then use these positive appraisals either spontaneously or strategically to feel better about the stressor (positive up-appraisal). These findings from preliminary Study 1 provide evidence that positive up-appraisal is a legitimate stress regulation strategy that can be distinguished from positive alt-appraisal. Participants were able to generate positive appraisals of a stressor when instructed to, and when given a choice to elaborate on those positive appraisals (up-appraisal) or to alt-appraise their negative appraisals, they overwhelmingly chose to use positive up-appraisal. We did not find any significant predictors of this choice of using one strategy over the other, so it is still unclear why participants strongly preferred to use positive up-appraisal. One possibility is that participants might view positive up-appraisal as more effective in improving their emotions, which is supported by the finding that those who used positive up-appraisal had a greater increase in their positive emotions than those who used positive alt-appraisal. However, this formulation is precarious given that participants only made their choices after providing both positive and negative appraisals. It is unclear whether people would prefer to use positive up-appraisal if that choice also required them to generate the positive appraisals in the first place especially given that participants reported that generating positive appraisals of their stressor was much more effortful than was generating negative appraisals of their stressor.

Although this preliminary study offered a promising early test of the formulation that generating positive appraisals of predominantly negative stressors can be an effective regulatory strategy, there are many questions that need to be addressed in the subsequent studies. First and most importantly, do people generate positive appraisals of negative stressors without explicit instruction to do so and does generating these positive appraisals predict positive emotional responses to the stressor? Second, would people still tend to use positive up-appraisal if that choice was tied to their ability to

spontaneously generate positive appraisals in the first place? Third, what individual differences predict people's tendency to generate positive appraisals of stressors?

Study 2: Pilot

To demonstrate that people spontaneously generate positive appraisals of a negative stressor (Research Aim 1), we conducted a pilot study to determine what appraisal ratings of a stressor element constitutes “unambiguously positive.” In this and some other studies, we focused on the COVID-19 pandemic as the predominantly negative stressor given that it was still ongoing at the time of data collection, it is almost universally regarded as a predominantly negative stressor (Sun et al., 2020) and it had appreciable negative impacts on people's mental health (especially at the beginning; Robinson et al., 2022).

Method

Participants

Fifty participants (34 female) were recruited from the Prolific subject pool to participate in a study on identifying elements of difficult situations. Forty participants identified as White, seven identified as Hispanic, two identified as African American, four identified as Asian, and three identified with more than one race/ethnicity, and one reported “other.” To be eligible, participants had to be between the ages of 18 and 55 years old ($M = 29.21$ years, $SD = 7.58$), speak fluent English, and reside in the United States. As for education, 21 participants completed high school, 19 completed a bachelor's degree, and 10 completed an advanced degree. One participant was excluded from data analyses for failing to follow instructions (did not list elements), leaving 49 participants.

Stressor Appraisal Task

Situation Description. Participants were first asked to think of a recent COVID-19-related situation that they were currently dealing with and to describe this situation fully. We used the word “situation” to avoid the negative connotations of the words “stress” or “stressor.”

Element Listing. Participants were asked to identify and elaborate on two positive and two negative elements of their COVID-19-related situation. The order in which they listed positive and negative elements was randomized.

Element Appraisals. Participants were then told that “Next you will be asked to rate how positive and negative each aspect of your situation is. Please provide ratings for both positive and negative.” They were then presented with their “situation” elements again (randomly) and rated how positive and negative they found each of these elements on two single-item measures: “positive/negative” from 0 (*not at all*) to 10 (*very*).

Procedure

Participants completed the study through their Prolific accounts (<https://www.prolific.com>), which linked them to a Qualtrics survey. After participants electronically signed the consent form, they completed a short demographic measure about their age, race, ethnicity, gender, education level, and family income level. They then completed the “stressor appraisal” task described above. After

completing this task, participants were debriefed and thanked for participation. They were redirected from the Qualtrics survey to the Prolific website and compensated \$1.00 for completing the 5-min study.

Results and Discussion

For each participant we calculated the average rating of each element pair (positive and negative). As expected, participants rated their positive elements as highly positive ($M = 8.10$, $SD = 2.04$) and not very negative ($M = 1.74$, $SD = 2.15$). Also as expected, participants rated their negative elements as not very positive ($M = 1.19$, $SD = 2.00$) but highly negative ($M = 8.30$, $SD = 1.65$).

Examination of the distribution of positive and negative ratings for the positive and negative elements led us to determine that a rating of six and higher on the positive ratings would be an adequate cutoff for “unambiguously positive” appraisals of stressor elements. This cutoff was low enough to include a large percentage (~87%) of the positive ratings of positive elements and high enough to only include a very small percentage (~8%) of the positive ratings of negative elements.

Study 3: Pilot

In the second pilot study, we aimed to demonstrate that when given a chance to partition their predominantly negative stressors into their constituent elements, people make positive appraisals of some elements of these stressors (Research Aim 1). Participants reported on 4, 5, or 6 stressor elements, which allowed us to explore how many elements people should partition their stressor into in future studies to promote accessing and reporting positive elements. This also allowed us to explore whether participants still report more negative than positive stressor elements (supporting the notion that the COVID-19 pandemic was a predominantly negative stressor), when people generally access positive elements of stressors—early or late in thinking about the stressor, and how much perceived effort it takes to generate positive versus negative elements of stressors (Research Aim 3), which could replicate the findings from preliminary Study 1.

Method

Participants

Sixty participants (35 female) were recruited from the Prolific subject pool to participate in a study on identifying elements of difficult situations. Forty-eight participants identified as White, eight identified as Hispanic, two identified as African American, seven identified as Asian, and three identified as “other.” To be eligible, participants had to be between the ages of 18 and 55 years old ($M = 30.57$ years, $SD = 9.86$), speak fluent English, and reside in the

United States. As for education, 25 participants completed high school, 19 completed a bachelor’s degree, and 26 completed an advanced degree.

Stressor Appraisal Task

Situation Description. As in Study 2—pilot, participants were asked to describe fully a recent COVID-19-related situation that they were currently dealing with.

Element Listing. Participants were randomly assigned to describe either 4, 5, or 6 unique elements of their COVID-19-related situation.

Element Appraisals. After describing their elements, participants rated the positivity and negativity of their elements using the same scale from Study 1. The order of the element ratings was randomized. We coded positive appraisals as those elements with positive ratings ≥ 6 and negative ratings < 6 (from Study 2—pilot), with the reverse for negative appraisals (positive ratings < 6 and negative ratings ≥ 6). Last, we coded mixed appraisals as those with positive and negative ratings ≥ 6 and neutral appraisals as those elements with positive and negative ratings < 6 .

Effort Rating. Participants viewed their elements again and then rated “How effortful it was to come up with this aspect” on a scale of 0 (*not at all*) to 10 (*very*).

Procedure

Participants completed the study through their Prolific accounts, which linked them to the Qualtrics survey. After the participants electronically signed the informed consent form, they completed a short demographic measure about their age, race, ethnicity, gender, education level, and family income level. They then completed the “stressor appraisal” task. After the task, participants were debriefed and thanked for participation. They were redirected from the Qualtrics survey to the Prolific website and compensated \$1.00 for completing the 5-min study.

Results and Discussion

Element Listing

As seen in Table 2, participants who listed more elements overall reported a greater percentage of those as positive appraisals of the stressor (28.6% for six-element group) than those who listed fewer elements (19.4% for four-element group). All groups reported negative appraisals most often with some neutral appraisals and very few mixed appraisals. Therefore, it appears that when faced with predominantly negative stressors, people generate positive appraisals of some elements of those stressors. It also appears, descriptively, that participants report

Table 2
Ratings of Stressor Elements Study 3—Pilot

Condition	Positive		Negative		Neutral		Mixed	
	<i>M</i>	% of total	<i>M</i>	% of total	<i>M</i>	% of total	<i>M</i>	% of total
Four—elements	0.78	19.4	2.5	62.5	0.72	18.1	0	0
Five—elements	1.05	21.0	3.62	72.4	0.29	5.7	0.05	1.0
Six—elements	1.71	28.6	3.24	54.0	1.00	16.7	0.05	0.8

Note. % of total = percent of appraisals in that condition.

a greater proportion of positive appraisals when listing more elements about the stressor.

Multilevel Modeling

One possible explanation for why participants reported proportionally more positive appraisals of stressors when they reported more elements overall is that they reported nonpositive appraisals first and then positive appraisals later. We tested this idea with an exploratory multilevel model in which the order of the appraisal (first through fourth/fifth/sixth) was a Level 1 predictor nested within individuals and whether the appraisal was positive or not (dummy-coded as 1 for positive and 0 for all other types) was the outcome. In each model, we person-centered the predictor variables and added the participant's mean as an additional predictor to isolate within-subject effects. As expected, participants were more likely to report positive appraisals later in their lists, $B = 0.42$, $SE = .11$, $t(300) = 3.69$, $p < .001$, $\beta = 0.65$, 95% CI [0.30, 1.00].

We next examined whether we could replicate the findings from Study 1 that it is relatively more effortful to generate positive than nonpositive appraisals of stressors. In these models, effort was the outcome and positivity of the appraisal was the predictor. Replicating Study 1, positive appraisals were slightly but significantly more effortful to generate than were nonpositive appraisals, $B = 0.83$, $SE = .37$, $t(300) = 2.27$, $p = .024$, $\beta = 0.12$, 95% CI [0.02, 0.22].

Summary

In sum, this pilot study demonstrated that when thinking about a predominantly negative stressor, people do generate some positive appraisals if prompted to think thoroughly about several different elements of a stressor. This effect is consistent with findings showing that people with a negativity bias become more positive about ambiguous stimuli the longer they take to interpret them (Neta & Tong, 2016).

Study 4

In Study 4, we first attempted to replicate and extend the findings from Study 3 in a well-powered study that given the opportunity to list several elements of a stressor, people spontaneously generate some positive appraisals of predominantly negative stressors (Research Aim 1). Participants wrote about a COVID-19-related situation they were dealing with (stressor), thought of six elements of that stressor (because it led to the highest proportion of positive appraisals in Study 3), and then rated those elements on their positivity/negativity. We preregistered this study (<https://osf.io/btqkz>).

We also aimed to replicate and extend the conceptual findings from preliminary Study 1 that positive up-appraisal and alt-appraisal are distinct strategies, that people tend to prefer positive up-appraisal, and that positive up-appraisal may lead to better improvements in positive emotion than does positive alt-appraisal (Research Aim 3). After generating six elements of their stressor and rating them on their positivity/negativity, participants were then instructed to choose any of the elements they generated and to help themselves feel better about the stressor by either focusing and elaborating on that element or reframing/reinterpreting that element. We hypothesized that if positive up-appraisal and alt-appraisal are distinct strategies, then participants would be more likely to choose to focus and elaborate on

selected positively appraised elements and more likely to reframe/reinterpret selected negatively appraised elements. Given the findings from preliminary Study 1, we also hypothesized that participants would be more likely to use positive up-appraisal than positive alt-appraisal, which was operationalized as choosing to focus/elaborate on a selected positive element at a greater frequency than would be expected given participants' base rate of generating positive elements.

Throughout the study, participants reported on their positive and negative emotional states, which allowed us to attempt to replicate the finding from preliminary Study 1 in which participants who used positive up-appraisal reported greater increases in positive emotion than those who used positive alt-appraisal. In addition, this allowed us to test a new exploratory hypothesis that generating positive appraisals will spontaneously improve participants' emotional state without (or before) explicitly focusing and elaborating on those positive appraisals (Research Aim 2).

Method

Participants

Eighty participants (39 female) were recruited from the Prolific subject pool to participate in a study. Sixty participants identified as White, 12 identified as Hispanic, two identified as African American, seven identified as Asian, six identified with more than one race/ethnicity, and five responded "other" or did not report their race. To be eligible, participants had to be between the ages of 18 and 55 years old ($M = 29.0$ years, $SD = 8.5$), speak fluent English, and reside in the United States. As for education, 34 participants completed high school, 32 completed a bachelor's degree, and 12 completed an advanced degree, with one participant not providing their education. One participant was excluded for not listing any aspects of their stressor (final $N = 79$).

Preregistered Sample Size Justification

We based our sample size calculation on the hypothesis that participants would be more likely to choose positive than negative elements of the stressor to use to make themselves feel better. To test this hypothesis, we plan to conduct a binomial test, which will allow us to test whether the binomial distribution of choices to up-appraise versus alt-appraise matches or not what we would expect. This expectation was derived arithmetically by using two probability ratios: first, when given a 50/50 choice to use positive or negative aspects to regulate their emotion (Study 1), people chose positive aspects 82% of the time (.82/50); second, on average people generate positive aspects 29% of the time (per set of six, Study 3). So, in the present study when people generate their own positive aspects (29% of the time) and then use those positive aspects versus negative aspects (82% of the time), we should expect them to overall use positive-up-appraisal around 48% of the time (.82/.50 = $X/.29$; $X = .48$). This yielded a necessary sample size of 65 to achieve a power of .90 in a binomial test. We recruited 80 participants in anticipation of missing data.

Written Materials

Emotion Ratings. Throughout the task, participants reported their current positive and negative emotional state using the same scale from Study 1.

Stressor Appraisal Task

Situation Description. As in the pilot studies, participants were asked to describe fully a recent COVID-19-related situation that they were currently dealing with.

Element Listing. Participants described six different “aspects” or elements of the COVID-19-related situation.

Element Appraisals. Participants rated the positivity and negativity of their elements using the same scale from Study 1. The order of the ratings was randomly generated. We calculated positive, negative, mixed, and neutral ratings as in Study 3.

Stress Regulation. Participants were then told that their goal was to make themselves feel better about their current situation and that to do so they could choose one of the “aspects” of their situation and either use alt-appraisal (“Reinterpret/reframe the aspect to make it more positive”) or up-appraisal (“Focus on the aspect and elaborate on it to make yourself feel better”). They then picked the element of their current situation they would like to use in their regulatory strategy and used that strategy to make themselves feel better (writing down their up-appraisals or alt-appraisals). Last, after reporting their final emotional state, participants reported which of the regulatory strategies they had chosen.

Procedure

Participants completed the study through their Prolific accounts, which linked them to the Qualtrics survey. After the participants electronically signed the informed consent form, they completed a short demographic measure about their age, race, ethnicity, gender, education level, and family income level. They then reported their baseline emotion. They then did the stressor appraisal task. They reported on their emotional states after reporting on their stressor (poststressor emotion), after listing and rating the elements of their stressor (postappraisal emotion) and then after they chose and used their regulatory strategy (postregulation emotion).

After completing the experiment, participants were debriefed, redirected from the Qualtrics survey to the Prolific website, and compensated \$3 for completing the 15-min study.

Results

Descriptives

Consistent with Study 3, participants rated a small but substantive number of their stressor aspects as unambiguously positive ($M = 1.27$, $SD = 1.47$) with 59.5% of participants providing at least one positive appraisal of this predominantly negative stressor.

Preregistered Hypotheses

Strategy Choice. A one-sample exact binomial test demonstrated that participants chose to focus on a positive appraisal about as often (22.8%) as the base rate of generating positive appraisals (21.2%), $p = .681$, 95% CI [0.14, 0.34], suggesting that, overall, participants did not exhibit a preference for choosing positive over negative/other appraisals to use when regulating their emotions, which was inconsistent with the findings from Study 1. Notably, this also held true when limiting the sample to just those who generated at least one positive aspect (chosen = 38.3%, base rate = 35.5%, $p = .761$, 95% CI [0.25, 0.54]). Another way of understanding this

relationship is that the number of positive appraisals participants generated was, perhaps obviously, a strong predictor of whether they chose to use a positive appraisal when regulating their emotion later, $B = 1.23$, $t(78) = 4.11$, $p < .001$, $\beta = 1.81$, 95% CI [1.05, 2.81].

Relation of Strategy Choice and Appraisal Valence. Providing support for our hypothesis that positive up-appraisal and alt-appraisal are distinct strategies, there was a significant relationship between the valence of the element of the stressor participants chose and the regulation strategy they chose to use with it, $\chi^2(1, N = 63) = 5.56$, $p = .018$. Participants ($n = 18$) who selected a positive element of their stressor to focus on were more likely to elaborate and focus on it (13/18, 72.2%) than to alt-appraise it (5/18, 27.8%), and the reverse was true for those who selected a negative element of their stressor to focus on ($n = 45$), who were more likely to alt-appraise it (29/45, 64.4%) than to elaborate and focus on it (16/45, 35.6%).

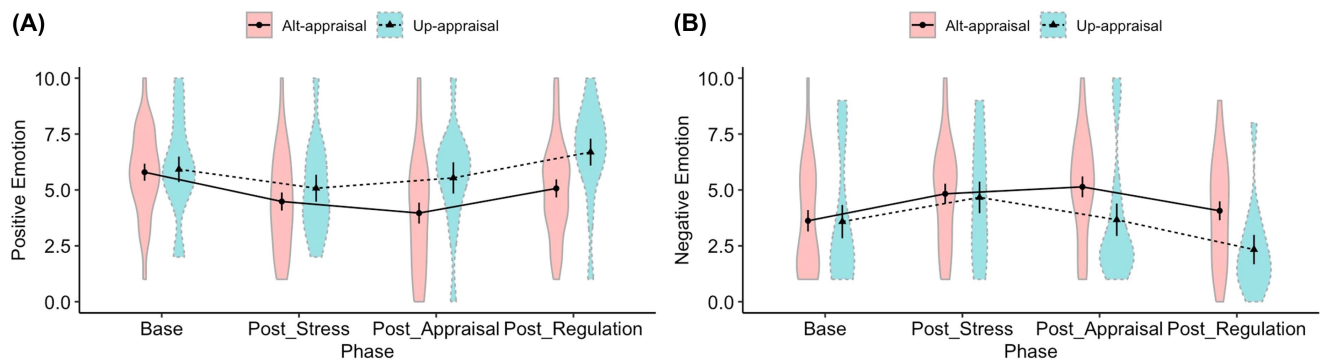
Effects of Strategy on Emotion. For those who used positive up-appraisal ($n = 13$) or positive alt-appraisal of a negative element ($n = 29$), we conducted a 2 (regulation strategy: positive up-appraisal, positive alt-appraisal) \times 3 (phase: poststressor, postappraisal, postregulation) mixed analysis of covariance with positive emotion and negative emotion as the dependent variables, regulation strategy as a between-subjects variable, phase as a within-subjects variable, and baseline positive emotion or negative emotion as the covariates in their respective models. Greenhouse–Geisser corrections were applied to account for sphericity.

Positive Emotion. For positive emotion, there were main effects of phase, $F(1.95, 76.13) = 17.26$, $p < .001$, $\eta_p^2 = .307$, and of regulation strategy, $F(1, 39) = 5.93$, $p = .02$, $\eta_p^2 = .132$, which were qualified by an interaction of phase and regulation strategy, $F(1.95, 76.13) = 3.49$, $p = .037$, $\eta_p^2 = .082$ (Figure 3A). This interaction seemed to be due to a small but nonsignificant rise in positive emotion from poststressor to postappraisal for those who used positive up-appraisal, $t(39) = 1.33$, $p = .192$, but a significant decline in positive emotion for those who used positive alt-appraisal, $t(39) = 2.24$, $p = .031$. Then, both groups tended to exhibit similar, significant rises in positive emotion from postappraisal to postregulation, positive up-appraisal: $t(39) = 3.24$, $p = .002$; positive alt-appraisal: $t(39) = 4.56$, $p < .001$. Ultimately, the combination of these effects led to those who used positive up-appraisal to report higher positive emotions at the end of the task than those who used positive alt-appraisal, $t(39) = 2.91$, $p = .006$.

Negative Emotion. For negative emotion, there were main effects of phase, $F(1.67, 63.35) = 21.09$, $p < .001$, $\eta_p^2 = .357$, and of regulation strategy, $F(1, 38) = 6.35$, $p = .016$, $\eta_p^2 = .143$, which were qualified by an interaction of phase and regulation strategy, $F(1.67, 63.35) = 5.71$, $p = .008$, $\eta_p^2 = .131$ (Figure 3B). This interaction mirrored the positive emotion findings and seemed to be due to a significant decrease in negative emotion from poststressor to postappraisal for those who used positive up-appraisal, $t(38) = -3.08$, $p = .004$, but no significant difference for those who used positive alt-appraisal, $t(38) = 1.48$, $p = .146$. Then, both groups exhibited similar, significant decreases in negative emotion from postappraisal to postregulation, positive up-appraisal, $t(38) = -3.12$, $p = .003$, and positive alt-appraisal, $t(38) = -3.88$, $p < .001$. Ultimately, the combination of these effects led to those who used positive up-appraisal to report lower negative emotions at the end of the task than those who used positive alt-appraisal, $t(38) = -3.06$, $p = .004$.

Figure 3

Study 4: Effects of Positive Up-Appraisal and Reappraisal on Positive Emotion (A) and Negative Emotion (B)



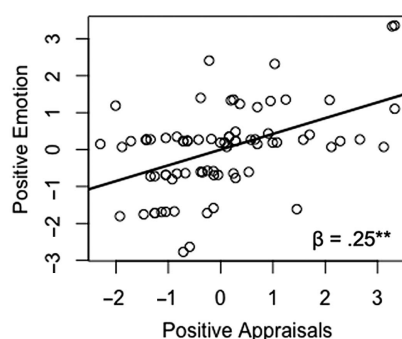
Note. See the online article for the color version of this figure.

Exploratory Analyses

Effect of Generating Positive Appraisals of Stressor on Emotions. Next, we conducted an exploratory analysis to test whether just generating positive appraisals of stressors might induce positive emotions, especially given our above findings that those who used positive up-appraisal differed from those who used positive alt-appraisal the most in their positive emotional responses after generating appraisals. We conducted a multiple regression with postappraisal positive emotion as the dependent variable, number of positive appraisals generated as the primary predictor, and baseline and poststressor positive emotion as the covariates. Number of positive appraisals generated was a significant, positive predictor of subsequent positive emotions (Figure 4) controlling for prior positive emotions, $B = 0.43$, $t(74) = 4.68$, $p < .001$, $\beta = 0.25$, 95% CI [0.14, 0.35]. It was also a significant, negative predictor of subsequent negative emotions controlling for prior negative emotions, $B = -0.67$, $t(72) = -6.00$, $p < .001$, $\beta = -0.34$, 95% CI [-0.46, -0.23].

Figure 4

Study 4: Relationship Between Positive Appraisals of Stressor and Subsequent Positive Emotions Controlling for Prior Positive Emotions



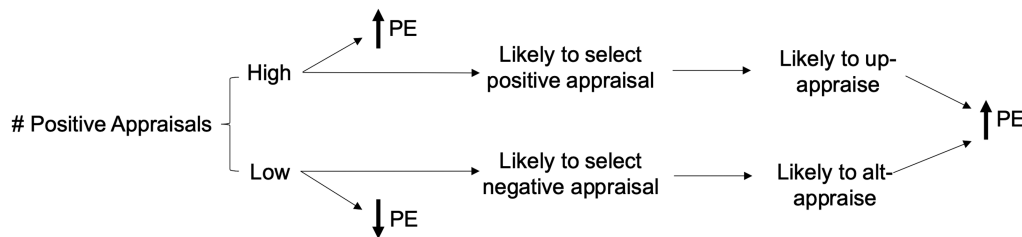
** $p < .005$.

Discussion

These findings again support the idea that some people spontaneously generate positive elements of predominantly negative stressors. We also showed for the first time that the very act of generating these positive appraisals made people feel better after talking about the stressor. This is quite striking because, at this point, participants were not given an explicit goal to feel better when asked to just generate elements of their stressors, so generating positive appraisals of predominantly negative stressors seems to be a spontaneous ER strategy that may or may not be outside of people's conscious awareness (Braunstein et al., 2017). In Study 5, we explore whether this finding generalizes beyond the familiar COVID-19 stressor to a novel lab stressor.

We also replicated and extended the finding from preliminary Study 1 that the up-appraisal of the positive elements of a stressor may be a distinct strategy from alt-appraising the negative elements of a stressor. Participants were more likely to choose to "elaborate and focus on" positive elements than to "reframe/reinterpret" negative elements, suggesting that participants may have a lay understanding of the distinction between positive up-appraisal and positive alt-appraisal. Importantly, similar to Study 1, these strategies predicted different emotional outcomes; participants felt more positive emotion overall after using positive up-appraisal than after using positive alt-appraisal. Unlike Study 1, we also found this effect for negative emotion. However, this effect seemed to occur almost entirely after generating the stress appraisals—both up-appraising and alt-appraising the chosen appraisals led to similar improvements in emotion. Given that participants who chose to use up-appraisal were likely to have generated more positive appraisals initially than those who chose to use alt-appraisal, this suggests that the primary additional benefit of up-appraisal comes from generating the positive appraisals in the first place (Figure 5). Because of these findings, in our remaining two studies, we focus on the predictors and outcomes of just generating positive versus nonpositive appraisals to predominantly negative stressors and not on up-appraisal or alt-appraisal.

Inconsistent with preliminary Study 1, participants did not selectively choose positive appraisals to use when regulating their emotions to the stressor. It is possible that they were just randomly choosing one of their appraisals to use in their stress regulation strategy. However,

Figure 5*Study 4: Model of the Additional Benefit of Positive Up-Appraisal Over Reappraisal in Stress Regulation*

Note. PE = positive emotion.

given the findings from preliminary Study 1, a more likely explanation is that in Study 4, when participants were free to both generate and choose what type of appraisals they wanted to use to regulate their emotion, they tended to generate and choose those types of appraisals that they are used to generating in real life situations. In preliminary Study 1, instructing participants to generate equivalent numbers of positive and negative appraisals potentially overrode this natural tendency for those who would otherwise just generate negative appraisals and gave them an opportunity to choose positive up-appraisal when they otherwise would not have. This formulation will need to be tested in future investigations.

Study 5

In Study 4, participants wrote about a stressor (COVID-19 pandemic) that they had already experienced, so it is likely that when asked to list elements of that stressor, they recalled elements that they had already associated with the stressor. Although it is still impressive that even just recalling those positive elements led to participants feeling better in the moment, we next tested whether this effect would extend to a novel stressor (Research Aims 1 and 2). In this way, we can demonstrate that it is not just the recall of already established positive appraisals of stressors that can help people regulate their emotions but also generating positive appraisals in the moment.

To test this hypothesis, we analyzed data from a study from our lab that was designed for another purpose. This study was originally designed to test our hypothesis that anticipating positive (vs. neutral) events (induced by Virtual Reality [VR] environments) helps people recover from stressors (Monfort et al., 2015); however, we also asked participants about their appraisals of the stressor, and it is those data that we focus on in this article. Therefore, we present only those results relevant to test this hypothesis and provide a description of the methods necessary for understanding these results. The other methods/data will be presented in another article.

Method

Participants

One hundred thirteen participants (65 female) were recruited from the Introductory to Psychology subject pool. Ninety-five participants identified as White, eight identified as Hispanic, eight identified as African American, eight identified as Asian, and two did not report their race. To be eligible, participants had to be over 18 ($M = 18.91$, $SD = 0.82$), have good vision, and have not previously

experienced sickness when using VR devices. Six participants' data were excluded from analyses because they did not follow instructions during the study sessions ($n = 1$) and/or did not provide five stressor elements ($n = 5$) leaving a final $N = 107$.

Sample Size Justification

With this sample size, we were able to recruit more participants than needed ($n = 95$) to achieve 90% power with an originally targeted effect size of $f^2 = .068$ (from Monfort et al., 2015).

Materials

Emotion Ratings. Participants' current positive and emotional state were measured using same measures as in Studies 1 and 4.

Element Listing. Participants had 3 min to describe five different "aspects" or elements of the stressor. We elected to have them describe five instead of six aspects because piloting indicated that participants were having trouble generating six unique aspects of the lab stressor.

Element Appraisals. Participants rated the positivity and negativity of their elements using the same scale from Study 1. The order of the ratings was randomly generated. We calculated positive, negative, mixed, and neutral ratings as in the prior studies.

Stressor

Participants were informed that they had 3 min to prepare for a 3-min speech on why they are a good friend and that an experimenter would rate the authenticity of the speech, including clarity, coherence, and persuasiveness of their argument—a stressor we have used successfully before to induce significant stress responses (Monfort et al., 2015; Waugh et al., 2010).

Procedure

After signing the consent form, participants reported basic demographics including age, gender, race, educational level, and family income. Then, they reported their pretask positive and negative emotions. Next, participants were presented with a black cross on a white background and asked to relax for 2 min. After the relaxation period, participants reported their emotions again, which served as their baseline emotion.

The original goal of the study was to test positive versus neutral anticipation, so after the baseline emotion measurements, the participants completed various VR tasks to induce anticipation. For the

present study's purposes, there was not a significant difference between the positive and neutral anticipation groups in the number of positive appraisals, Welch's $t(85.02) = 1.38$, $p = .172$, so we combined the groups for subsequent analyses. After the VR tasks, participants rated their postassignment emotions.

Then, they were given the speech topic and prepared for the speech for 3 min. After speech preparation, participants had another 3 min to list and appraise their stressor elements. They then reported their poststressor emotion. The experimenter then flipped a double-sided coin to let the participants know that they would not need to give the speech (Monfort et al., 2015). After the stressor, participants were asked to relax for another 2 min, during which they reported their emotion at 1 and 2 min into this recovery period. Finally, after they completed additional VR tasks, participants were debriefed and received .5 credits for their participation in the 30-min study.

Results

Descriptives

Participants reported a much higher number of positive elements ($M = 2.28$, 45.6%, with 85% of participants reporting at least one) than in prior studies, presumably because this stressor was milder than the COVID-19 pandemic. Participants also reported negative aspects ($M = 1.42$, 28.4%), neutral aspects ($M = 1.14$, 22.8%), and mixed aspects ($M = 0.16$, .03%).

Stress Manipulation Check

To examine whether the stressor affected participant's emotions as expected, we conducted two repeated measures analyses of variance (phase: baseline, postanticipation induction, poststressor), one for positive and one for negative emotion (Greenhouse-Geisser corrections were applied to account for sphericity). There were significant effects of phase for both positive, $F(1.54, 163.33) = 125$, $p < .001$, $\eta_p^2 = .541$, and for negative emotion, $F(1.64, 173.92) = 10.86$, $p < .001$, $\eta_p^2 = .093$. Positive emotions significantly increased from baseline ($M = 7.42$, $SE = .19$) to postanticipation ($M = 8.22$, $SE = .18$), $t(106) = 6.88$, $p < .001$, and negative emotions significantly decreased from baseline ($M = 3.87$, $SE = .19$) to postanticipation ($M = 3.02$, $SE = .17$), $t(106) = -6.32$, $p < .001$. Confirming that the speech preparation task was stressful, from postanticipation to poststressor, positive emotions significantly decreased ($M = 5.75$, $SE = .22$), $t(106) = -12.74$, $p < .001$, and negative emotions significantly increased ($M = 3.47$, $SE = .21$), $t(106) = 2.14$, $p = .035$.

Effect of Generating Positive Appraisals of Stressor on Emotions

Next, we tested the hypothesis that generating positive appraisals of elements of the stressor would predict increased positive emotions following the stressor. We conducted a multiple regression with positive emotion after stressor as the outcome, number of positive appraisals generated as the primary predictor, and baseline and postanticipation induction positive emotion as the covariates. Supporting our hypothesis and consistent with Study 4, the number of positive appraisals was a significant, positive predictor of poststressor positive emotions, $B = 0.43$, $t(103) = 4.90$, $p < .001$, $\beta = 0.32$, 95% CI [0.19, 0.45]. Number of positive appraisals was also

negatively related to poststressor negative emotions, $B = -0.50$, $t(103) = -4.93$, $p < .001$, $\beta = -0.37$, 95% CI [-0.52, -0.22].

Discussion

In this study, we replicated the finding from Study 4 that generating positive appraisals of stressors can improve people's positive emotions without any explicit regulatory goals. We also demonstrated that this effect occurs for stressors (COVID-19 pandemic, speech preparation) that differ on several dimensions such as familiarity, chronicity, and naturally occurring versus lab induction. One limitation to this study is that, unlike the COVID-19 pandemic, the speech preparation task, while frequently used to induce stress, should not be considered a "predominantly negative" stressor given that participants actually reported higher numbers of positive appraisals than negative appraisals of it.

Study 6

In Studies 4 and 5, we found that participants who generated positive appraisals of some elements of their stressor felt better afterward even without any regulatory instructions from the experimenters. In Study 6, we explored the individual differences among people that might predict this tendency to find the positive in the midst of predominantly negative stressors (Research Aim 4).

The individual differences we examined fell into four categories: positivity, adaptive regulation, mixed emotion, and negativity. First, we measured positivity because those who score high on positivity are those who frequently make positive appraisals of life circumstances, which may extend to making positive appraisals of stressor elements (Caprara et al., 2010). Also in this category is optimism, which reflects positive appraisals of future circumstances and is related to high well-being and good stress regulation (Carver & Connor-Smith, 2010; Scheier & Carver, 1985), and extraversion, which is a strong predictor of experiencing positive emotions in daily life (Costa & McCrae, 1980).

Second, we examined whether individual differences in regulation that have been shown to be associated with positive emotion might be related to making positive appraisals of stressor elements. Specifically, we examined trait positive reappraisal, which has been shown to be related to positivity, positive emotions during stress and well-being (Gross, 1998; McRae & Mauss, 2016), and ego-resilience, which predicts positive emotions in the midst of predominantly negative stressors (Fredrickson et al., 2003; Waugh & Koster, 2015).

Third, we examined individual differences in the degree to which people endorse mixed emotions because experiencing positive emotions in the midst of a predominantly negative stressor constitutes a mixed emotional experience. We assessed the tendency to experience mixed emotions in daily life (Barford & Smillie, 2016) as well as the degree to which people believe that positive emotions can co-occur with negative emotions and in negative situations in a scale we created for this study.

Last, we examined some possible negative predictors of appraising stressor elements as positive. We examined negativity as the frequency with which people feel negative emotions and valuing happiness, which assesses the degree to which people base their self-worth on finding happiness and is, paradoxically, negatively related to well-being and positive emotions (Mauss et al., 2011).

Method

Participants

Four hundred sixty-three participants (217 females) were recruited from the <https://www.prolific.com> subject pool to participate in a study on identifying aspects of situations. Three hundred forty-seven participants identified as White, 39 identified as Hispanic, 38 identified as African American, 33 identified as Asian, four identified as American Indian/Alaskan Native, 24 identified as more than one race, and 17 replied “other” or did not report their race. To be eligible, participants had to be between the ages of 18 and 55 years old ($M = 33.09$, $SD = 9.43$), speak fluent English, and reside in the United States. As for education, 187 participants completed high school, 197 completed a bachelor’s degree, and 78 completed an advanced degree, with one participant not providing their education. Nineteen participants were excluded from data analyses for failing to follow instructions (did not list elements) and two were excluded for taking less than one-third of the median amount of time it took to complete the survey. The final sample size used in analyses was 442 participants.

Sample Size Justification

Sample size was determined using a power analysis to achieve 80% power with an effect size ($r = .14$) derived from a prior questionnaire validation study which piloted the relationship between positivity-related individual differences and positive evaluations of a stressor (Supplemental Materials).

Stressor Appraisal Task

The stressor appraisal task was the same as in Study 4, in which participants described a recent COVID-19-related situation they were currently experiencing, listed six elements (“aspects”) of it and appraised those elements on their positivity/negativity on a scale from 0 (*not at all*) to 10 (*very*). Participants also again reported on their current positive and negative emotional state from 0 (*not at all*) to 10 (*very*) at various aspects of the experiment (same measures as in Studies 1, 4, and 5).

Positivity Scales

Positivity. The Positivity Scale consists of eight items from 1 (*strongly disagree*) to 5 (*strongly agree*) that measure general positivity or the tendency to view life and experiences with a positive outlook ($\alpha = .92$; Caprara et al., 2012).

Optimism. Participants completed the revised version of the Life Orientation Scale (Scheier et al., 1994), which measures dispositional optimism ($\alpha = .69$) on a scale of 1 (*I disagree a lot*) to 4 (*I agree a lot*).

Extraversion. Participants completed the extraversion subscale of the Big Five Inventory-2 ($\alpha = .89$; Soto & John, 2017) using a 5-point scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*).

Adaptive Regulation Scales

Positive Reappraisal. Participants responded to the two items from the Coping Orientation to Problems Experience Inventory

(Carver et al., 1989) that measures the tendency to use positive reappraisal in response to “hardships in your life” ($\alpha = .85$) on a scale from 1 (*I haven’t been doing this at all*) to 4 (*I’ve been doing this a lot*).

Resilience. Participants responded to the 14 item Ego Resiliency Scale (ER-89; Block & Kremen, 1996), which measures peoples’ ability to bounce back or recover from stress ($\alpha = .83$) using a scale from 1 (*does not apply at all*) to 4 (*applies very strong*).

Mixed Emotion Scales

Mixed Emotions Experience. Participants completed the Trait Mixed Emotions Scale (Barford & Smillie, 2016), which assesses the frequency with which participants experience mixed emotions (e.g., “both happy and sad”; $\alpha = .90$) as well as positive emotionality ($\alpha = .83$; “happy”), negative emotionality ($\alpha = .81$; “sad”), and neutrality ($\alpha = .06$; “intense”). Positive emotionality scores were not used due to measurement redundancy with the positivity scale (the same pattern of results was found with either measure; [$r = .716$, $p < .001$]), and we prioritized the positivity scale due to the hypothesized relationship between it and generating positive appraisals. Neutrality scores were not used due to very low reliability. Participants rated how often they feel each of the items on a scale of 1 (*never*) to 5 (*very frequently*).

Dialectical Emotions Scale. Participants completed the Dialectical Emotions Scale, which is a scale we created and validated to assess various beliefs that mixed emotions can occur (see Supplemental Materials for scale construction information). The subscales include the belief that positive and negative emotions can co-occur (co-occurrence of positive and negative; $\alpha = .94$), the belief that you can experience positive emotions in negative/stressful situations (positive during negative situations; $\alpha = .89$), and the belief that you can experience negative emotions in positive situations (negative during positive situations; $\alpha = .93$). Participants rated how much they agree to each item on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*).

Negativity Scales

Negative Emotionality. We used the negative emotions subscale of the Trait Mixed Emotions Scale to measure negative emotionality (see above). Note that this scale measures frequency of negative emotions while the positivity scale measures positive outlooks, so these two scales are not symmetrical.

Valuing Happiness. Participants responded to the Valuing Happiness Scale, which assesses people’s overvaluation of happiness ($\alpha = .74$; Mauss et al., 2011) on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

Procedure

Participants completed the study through their <https://www.prolific.com> accounts, which linked them to a Qualtrics survey. After participants electronically signed the consent form, they completed a short demographic measure about their age, race, ethnicity, gender, education level, and family income level. Participants first reported their baseline emotional states. They then described a COVID-19-related situation that they were currently experiencing. After describing their COVID-19-related situation, participants reported their poststressor

emotions. Then, participants listed and appraised their stressor elements. Participants then reported their postappraisal emotions. Last, participants completed the scales listed above (dialectical emotions, positive reappraisal, optimism, mixed emotions, extraversion, positivity, valuing happiness scale, and resilience). After responding to the scales, participants were debriefed and thanked for participation. They were compensated \$3.00 for the 20 min it was estimated to complete the survey.

Results

Descriptives

Consistent with prior studies, participants were able to generate positive appraisals of their stressor ($M = 1.72$, $SE = .08$; 28.7%), and like Studies 3 and 4, these were again considered predominantly negative stressors with more negative elements ($M = 3.20$, $SE = .10$; 53.4%). Participants also reported some neutral ($M = 1.02$, $SE = .07$; 17%) and mixed elements ($M = 0.06$, $SE = .01$; 1%).

Emotional Outcomes

Next, we conducted two one-way (phase: baseline, poststressor, postappraisal) repeated measures analyses of variance with positive and negative emotion as the dependent variables, respectively (Greenhouse–Geisser corrections were applied to account for sphericity). There were significant effects of phase for both positive, $F(1.80, 791.39) = 70.20$, $p < .001$, $\eta_p^2 = .138$, and for negative emotion, $F(1.78, 786.93) = 59.41$, $p < .001$, $\eta_p^2 = .119$. Confirming that the stressor listing was stressful, positive emotions significantly decreased from baseline ($M = 6.07$, $SE = .11$) to poststressor ($M = 5.54$, $SE = .12$), $t(440) = -8.38$, $p < .001$, and negative emotions significantly increased from baseline ($M = 3.01$, $SE = .12$) to poststressor ($M = 3.54$, $SE = .12$), $t(441) = 6.94$, $p < .001$. After the stressor, positive emotions continued to decrease from poststressor to postappraisal ($M = 5.29$, $SE = .12$), $t(440) = -4.22$, $p < .001$, and negative emotions continued to increase from poststressor to postappraisal ($M = 3.89$, $SE = .13$), $t(441) = 4.88$, $p < .001$.

Effect of Generating Positive Appraisals of Stressor on Emotions

We again replicated the effect from Studies 4 and 5 that the number of positive appraisals participants generated of the stressor positively predicted postappraisal positive emotions controlling for baseline and poststressor positive emotions, $B = 0.26$, $t(437) = 7.31$, $p < .001$, $\beta = 0.17$, 95% CI [0.12, 0.22], and negatively predicted postappraisal negative emotions, $B = -0.26$, $t(437) = -6.38$, $p < .001$, $\beta = -0.16$, 95% CI [-0.22, -0.11].

Zero-Order Correlations Among Scales and Appraisals

To assess the individual differences that predict the generation of positive appraisals, we first conducted zero-order correlations between each of the scales and positive (as well as negative) appraisals (Table 3). Notably, the positivity and adaptive regulation scales were all significantly positively correlated with the number of positive appraisals participants generated. Negative emotionality

and beliefs that negative emotions happen in positive situations were significantly negatively correlated with number of positive appraisals.

Bayesian Variable Selection

To narrow down the list of scales to the ones most critical in predicting positive appraisals, we conducted a stochastic search variable selection (SSVS), which is a Bayesian variable selection procedure that samples thousands of possible regression models with different sets of predictors to determine what the probability of model inclusion ($\alpha < .05$) is for each predictor given the uncertainty of other predictors included in the models (George & McCulloch, 1997). In other words, it can pick the “best” or “most reliably predictive” covariate(s) among a set of correlated predictors. We used the SSVSforPsych shinyapp (Bainter et al., 2020) with number of positive appraisals as the dependent variable, the 11 scales as predictors, 1,000 burn-in iterations (to allow for convergence), 10,000 total iterations, .6 as the prior inclusion probability (to reflect that about 60% of the predictors exhibited significant zero-order correlations with positive appraisals), and .5 as the marginal inclusion probability threshold (the proportion of models that the variable was included in because it helped predict the outcome).

As seen in Figure 6, positivity and negative emotionality had the highest marginal inclusion probability, which suggests that these are the most reliable predictors of the number of positive appraisals participants generated given the possible inclusion of the other predictors in various regression models. Notably, positive reappraisal also demonstrated fairly good inclusion probability at around .36. When putting positivity and negative emotionality into the same model predicting positive appraisals, they both significantly predicted positive appraisals when controlling for the other: positivity: $B = 0.02$, $SE = .01$, $t(439) = 2.53$, $p = .012$, $\beta = 0.15$, 95% CI [0.03, 0.27] and negative emotionality: $B = -0.06$, $SE = .03$, $t(439) = -2.03$, $p = .044$, $\beta = -0.12$, 95% CI [-0.24, 0.00]. Neither of the adaptive regulation scales significantly predicted positive appraisals when added to the model with positivity and negative emotionality: positive reappraisal: $B = 0.10$, $SE = .05$, $t(438) = 1.84$, $p = .066$, $\beta = 0.09$, 95% CI [-0.01, 0.19] and resilience: $B = 0.01$, $SE = .01$, $t(438) = 0.65$, $p = .518$, $\beta = 0.04$, 95% CI [-0.07, 0.14].

Exploratory Analyses Examining Positivity/Negative Emotionality on Positive Emotion Outcomes

Given that positivity was one of the strongest/most reliable predictors of positive appraisals and that positive appraisals predicted positive emotions in the stress task, we conducted exploratory analyses to examine whether positivity predicts positive emotions during the stress task and whether that relationship is mediated by positive appraisals. Interestingly, positivity did not predict postappraisal positive emotions controlling for baseline and poststressor positive emotions, $B = 0.01$, $SE = .01$, $t(437) = 0.95$, $p = .344$, $\beta = 0.03$, 95% CI [-0.03, 0.09]. Instead, positivity predicted poststressor positive emotions controlling for baseline, $B = 0.03$, $SE = .01$, $t(437) = 3.42$, $p < .001$, $\beta = 0.11$, 95% CI [0.05, 0.18]. Further, there was a significant indirect effect from positivity to poststressor positive emotions through positive appraisals, $a \times b = .007$, $SE = .002$, $t(436) = 4.06$, $p < .001$, 95% CI [0.004, 0.011].

Table 3
Correlations Among Scales and Appraisals (Study 6)

Scale	Positive appraisal (No.)	Negative appraisal (No.)
Positivity scales		
Positivity	.23**	-.22**
Optimism	.19**	-.18**
Extraversion	.13**	-.15**
Adaptive regulation scales		
Positive reappraisal	.16**	-.04
Resilience	.15**	-.12*
Mixed emotion scales		
Mixed emotion experience	-.09	.11*
Beliefs—PE in Neg. situations	.01	.03
Beliefs—NE in Pos. situations	-.13**	.12*
Beliefs—PE and NE coexist	-.06	.10*
Negativity		
Negative emotionality	-.22**	.23**
Valuing happiness	-.01	.05

Note. PE = positive emotion; NE = negative emotion; Pos. = positive; Neg. = negative.

* $p < .05$. ** $p < .01$.

We conducted similar exploratory analyses for negative emotionality, given that it was also a reliable negative predictor of positive appraisals. Unlike positivity, negative emotionality was a significant negative predictor of postappraisal positive emotions when controlling for baseline and poststress positive emotions, $B = -0.07$, $SE = .02$, $t(437) = -3.94$, $p < .001$, $\beta = -0.10$, 95% CI $[-0.15, -0.05]$. Further, there was a significant indirect effect from negative emotionality to postappraisal positive emotions through positive appraisals, $a \times b = -.02$, $SE = .01$, $t(436) = -3.57$, $p < .001$, 95% CI $[-0.03, -0.01]$. Interestingly, like positivity, there was also a significant indirect effect from negative emotionality to

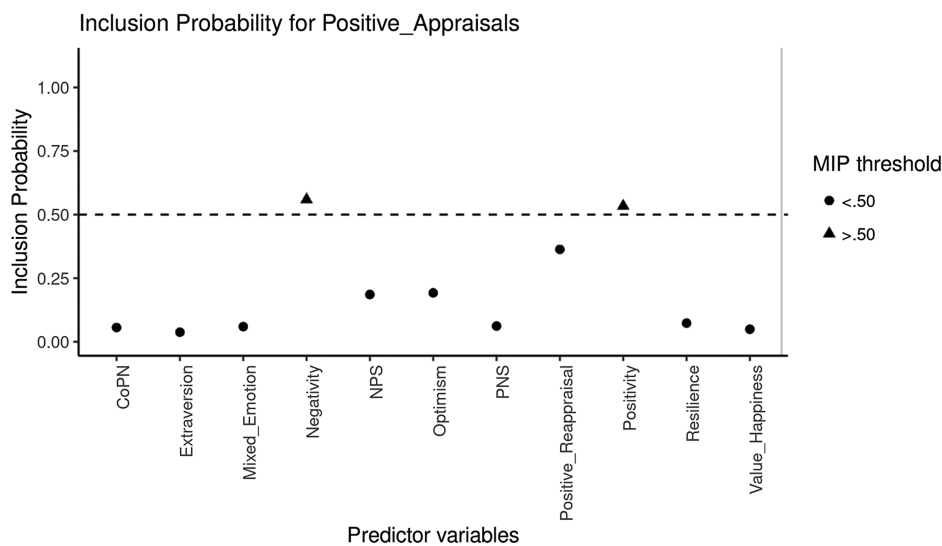
poststress positive emotions through positive appraisals, $a \times b = -.02$, $SE = .01$, $t(436) = -3.64$, $p < .001$, 95% CI $[-0.03, -0.01]$.

Discussion

In this study, we aimed to discover any reliable individual differences that could predict the degree to which people generate positive appraisals of stressors. We found that positivity and negative emotionality were the most reliable predictors of positive appraisals given all the possible models including other predictors and remained significant predictors when controlling for each other.

Figure 6

Study 6: Bayesian Variable Selection Procedure for Predictors of Positive Appraisals (Bainter et al., 2020)



Note. MIP = marginal inclusion probability; CoPN = co-occurrence of positive and negative; NPS = negative in positive situations; PNS = positive in negative situations.

The most parsimonious explanation of these findings is that the propensity to generate (or not) positive appraisals in life extends to when those positive appraisals are specifically about predominantly negative stressors. This formulation may help explain why positivity is often correlated with lower perceived stress (Litwic-Kaminska et al., 2023) and other adaptive stress responses (Caprara et al., 2019)—that people high in positivity are able to positively appraise some of the elements of the stressor even if the stressor as a whole is negative. Further, they may be doing so naturally throughout the course of the stressor—positivity and negative emotionality predicted participants' initial stress response when recalling their stressor, suggesting that people high in positivity/negative emotionality may be using this opportunity to recall the positive/not positive appraisals they have already made about the stressor (Speer & Delgado, 2017). Negative emotionality, but not positivity, also predicted changes in stress responses after generating the appraisals, suggesting the possibility of a downward spiral for those high in negative emotionality (Garland et al., 2010)—thinking more about a stressor and its elements leads to few positive appraisals about it, which, in turn, makes them feel worse about the stressor. However, to more accurately assess these mediational effects, future studies should examine these relationships with longitudinal designs that control for prior measurements of the variables of interest (Maxwell et al., 2011).

The adaptive regulation scales (resilience, positive reappraisal) predicted positive appraisals by themselves, but not when controlling for positivity and negative emotionality. These findings suggest that the relationship between adaptive regulation and experiencing positive emotions during stress (Fredrickson et al., 2003; McRae & Mauss, 2016; Waugh & Koster, 2015) may be due to those high in adaptive regulation generating positive appraisals of life and of stressful situations (Fredrickson et al., 2003; Kalisch et al., 2014). Additionally, we have shown in these studies that generating positive appraisals can be an spontaneous stress regulation strategy, and it is possible that individual differences in adaptive regulation may predict the outcomes from more controlled/explicit stress regulatory strategies (McRae, Jacobs, et al., 2012) above and beyond the effect of positivity/negative emotionality. This formulation is speculative, however, and will need to be tested in future research.

General Discussion

The goal of these studies was to provide a possible explanation for how people generate positive emotions about/during predominantly negative stressors. We demonstrated that people are able to partition their stressor (especially complex ones like the COVID-19 pandemic) into separable constituent elements and that each of these elements have their own emotional quality. For predominantly negative stressors, most of these elements are appraised as negative. For example, the predominantly negative COVID-19 pandemic stressor consisted of negative elements like social isolation, fear of illness, etc. However, and critically, despite the preponderance of negative elements, people can and do spontaneously generate some positive appraisals of some of the elements of these stressors (e.g., family time, more time in nature for COVID-19 pandemic). This suggests that stressors are quite heterogenous when considering how people feel about different elements of them. Importantly, we demonstrated (in Study 5) that stressors do not necessarily need to be

chronic life-altering events (like the pandemic) for them to be considered heterogenous and to evoke positive appraisals; nevertheless, future investigations should replicate these findings in additional stressors with different characteristics (duration, type, cause, etc.).

The very act of generating and/or accessing these positive appraisals of some stressor elements leads people to feel better about the stressor. Participants spontaneously generated these positive appraisals when given the opportunity to discuss the different elements of their stressor and did so without any explicit regulatory goals, which suggests that just considering the varied elements of a stressor may be a powerful spontaneous ER strategy (Braunstein et al., 2017). This finding is consistent with research on the benefits of thinking and writing about stressful events (Stanton & Low, 2012), with some of that research suggesting that these emotional expressiveness benefits are gained through meaning-making and positive emotions (Pennebaker & Chung, 2011; Slatcher & Pennebaker, 2006). It is also consistent with the finding that just generating positive thoughts about a negative situation can invoke significant increases in positive emotion even before fully elaborating on those thoughts (Waugh et al., 2022).

Although people did generate some positive appraisals, doing so was not necessarily easy. We demonstrated that when asked to think about a predominantly negative stressor, generating positive appraisals was generally more effortful and occurred later than generating nonpositive appraisals. This finding highlights the regulatory importance of thoroughly describing stressors. If researchers and/or clinicians only ask people to describe their stressor cursorily or holistically, the participants/clients might miss the opportunity to delve into the less-salient positive appraisals of the stressor and the researchers/clinicians might have an overly negative impression of the stressors that people are undergoing. This thoroughness in addressing stressors is an important aspect of some therapeutic techniques, such as the abovementioned expressive writing (Stanton & Low, 2012), and we demonstrate here a possible mechanism through which these techniques might work—generating positive appraisals.

Besides their potential role in spontaneous ER, these positive appraisals also can serve as the foundation for strategic ER. Prior studies on reappraisal have distinguished them based on goals—either to increase positive or to increase negative (McRae & Mauss, 2016; Shiota & Levenson, 2012)—and specific tactics, like changing circumstances versus challenging reality (McRae, Ciesielski, & Gross, 2012; Vlasenko, Hayutin, et al., 2024) and orienting the reappraisals toward the past or toward the future (Vlasenko, Tucker, & Waugh, 2024). The common denominator with all of these formulations of reappraisal, however, is that they define it as changing or reframing thoughts about the emotional event in order to feel better. The implicit (and sometimes explicit) assumption in these studies is that people have an initial negative appraisal of the emotional event that then needs to be changed/reframed/reinterpreted. This assumption is quite reasonable when the emotional events are short presentations of vivid emotional imagery (McRae, Ciesielski, & Gross, 2012), or when the participant is directed to focus on their overall impression of a negative stressor (Jamieson et al., 2013). Our study demonstrates, however, that these assumptions break down when considering complex stressors with multiple elements and when one allows people to thoroughly describe those elements. In that case, sometimes people come up with positive appraisals, which

do not need to be changed per se, but rather elaborated upon to augment their positive emotional effects. Although we call this positive up-appraisal in this study, this is almost certainly also occurring in some reappraisal studies that focus on benefit-finding (Shiota & Levenson, 2012). In addition, distinguishing between up-appraisal and alt-appraisal may be critical for understanding counter-hedonic ER as well (Tamir et al., 2008). For example, up-regulating anger in anticipation of a conflict may look quite different if one is up-appraising an initial anger appraisal or alt-appraising an initial positive appraisal by trying to change it to become angry. It is critical for future investigations into reappraisal and for clinicians to be aware of this distinction between alt-appraisal and up-appraisal because they may require different levels of cognitive effort, may be differentially preferred to use, and may have different emotional outcomes.

Last, we sought to address possible individual difference predictors of generating positive appraisals to predominantly negative stressors and found that, perhaps unsurprisingly, positivity and negative emotionality were reliable positive and negative predictors, respectively. This suggests that those who generally make positive appraisals of life events also generally make positive appraisals of even those life events that are predominantly negative. Further, we found that those who exhibit adaptive regulation, reflected by resilience and trait reappraisal, may identify the positive elements of stressors because they are also high in positivity. A limitation of this finding is that we only investigated a small set of possible individual differences and only examined one type of stressor. Future investigations should investigate other individual difference predictors and identify possibly different relationships between these predictors and different types of stressors—for example, extraversion may be a stronger predictor of generating positive appraisals of social stressors (Lü et al., 2018).

In summary, we demonstrate that to feel better about a stressor, thoroughly describing the constituent elements of the stressor has beneficial emotional outcomes. Doing so may allow for the generation of positive appraisals, which, in turn, may spontaneously improve stress responses. In addition, using these positive appraisals to strategically regulate emotions may require different mechanisms (elaborate/focus on) than reappraising a negative appraisal into a positive one (inhibiting an initial appraisal, generating plausible alternates). These findings may prove critical for aiding future investigations into adaptive ER as well as clinicians interested in the myriad ways that people may cope with their stress.

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