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ARTICLE



When does changing emotions harm authenticity? Distinct reappraisal strategies differentially impact subjective and observer-rated authenticity

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ABSTRACT

We compared the effect of two commonly-studied reappraisal techniques on authenticity during a lab-based social interaction: emotion-focused reappraisal, which explicitly instructs people to change their emotions, and perspective-based reappraisal, which focuses on changing people's viewpoint of an event. Study 1 showed that people who used perspective-based reappraisal were more authentic than people who used emotion-focused reappraisal. In Study 2 we replicated this effect, demonstrating that perspective-based (vs. emotion-focused) reappraisal leads to more authenticity and that this effect is statistically mediated by greater emotion regulation awareness in the emotion-focused reappraisal condition. Taken together, these findings suggest that emotion regulation techniques that do not make people aware they are changing their natural emotional response may leave authenticity intact.

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Authenticity; emotion regulation; reappraisal; emotion regulation awareness

Authenticity is highly desirable, at least in Western cultures (Slabu, Lenton, Sedikides, & Bruder, 2014). For example, at the societal level, people prefer to buy brands and vote for politicians that they perceive as authentic (Gilmore & Pine, 2007; Parry-Giles, 2001). At the individual level, prominent conceptualizations of authenticity highlight how the sense that one's behavior is consistent with one's feelings and sense of self contributes to personal well-being and social functioning (Goldman & Kernis, 2002; Kraus, Chen, & Keltner, 2011). However, when navigating social relationships, it is often appropriate and even adaptive to change one's natural emotional responses, that is, to engage in *emotion regulation* (Gross, 1998a). At first glance, emotion regulation and authenticity may seem mutually exclusive. Is it possible to use emotion regulation techniques while at the same time maintaining authenticity? In the current work we aimed to better understand why modifying emotions might harm authenticity and identify emotion regulation techniques that may leave authenticity intact.

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 Supplemental data for this article can be accessed [here](#).

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Authenticity and emotion regulation

Authenticity has been described as the “unobstructed operation of one’s true self” (Goldman & Kernis, 2002, p. 19). In everyday terms, this entails behaving in line with one’s thoughts, feelings, values, and beliefs. Research at the dispositional level has shown that generally feeling authentic is positively related to higher self-esteem (Goldman & Kernis, 2002), higher subjective well-being (Kifer, Heller, Perunovic, & Galinsky, 2013), and better physical health (Sheldon, Ryan, Rawsthorne, & Ildardi, 1997). Moreover, authenticity fosters the development of meaningful relationships, whereas its lack can lead to conflict, less understanding, and poor social support (Kernis & Goldman, 2006; Sheldon et al., 1997; Swann, De La Ronde, & Hixon, 1994; Swann & Pelham, 2002). Finally, in the workplace the emotion expressions of employees are often dictated by organizational goals, for example, smiling when interacting with customers so as to encourage future patronage. This inauthentic behavior, coined “emotional work” (Hochschild, 1979, 1983), has been linked to alienation and increased rates of burnout (Wharton, 1999). In sum, authenticity appears to be an important component of well-being in multiple domains.

One behavior that could be detrimental to authenticity is trying to change one’s naturally-occurring emotional response to evocative situations. While emotion regulation can help people meet the demands of social situations (Gross, Richards, & John, 2006), under certain circumstances it can come at the cost of making people feel inauthentic. For example, people who frequently use the emotion regulation technique called *suppression*, which entails the inhibition of ongoing emotionally expressive behavior (Gross, 1998a), tend to report lower dispositional authenticity (Gross & John, 2003). Lower feelings of authenticity, in turn, have been found to explain why habitual use of suppression is associated with worse social outcomes such as lower social support and poorer relationship quality (English & John, 2013; Impett et al., 2012; but see Le & Impett, 2013 for a boundary condition of this effect). Suppression is an example of a *response-focused* emotion regulation technique (Gross, 1998a), strategies that are implemented to control downstream behaviors such as emotion expression after the emotion-generative process has already completed. While suppression has been shown to decrease the expression of emotions, as it occurs after the target emotion is already generated it generally has no effect on the subjective experience of emotion (Webb, Miles, & Sheeran, 2012). The resulting discrepancy between subjective experience and behavior may be one reason that people who often suppress their emotions generally feel more inauthentic (English & John, 2013; Gross & John, 2003).

While the detrimental effects of habitual use of suppression on authenticity have been established, less is known about how authenticity relates to the use of *reappraisal*, an emotion regulation strategy broadly defined as “cognitively transforming [a] situation so as to alter its emotional impact” (Gross, 1998b, p. 284). Reappraisal is an *antecedent-focused* regulation strategy that occurs earlier in the emotion-generative process than response-focused strategies (Gross, 1998a), and has been shown to effectively change both the subjective experience and expression of emotions (Webb et al., 2012).¹ The habitual use of reappraisal has been found to be positively related to both personal well-being (John & Gross, 2004; McRae, Jacobs, Ray, John, & Gross, 2012) and interpersonal functioning (Gross & John, 2003; Srivastava, Tamir, McGonigal, John, & Gross, 2009).

However, only two studies to our knowledge have directly tested the relationship between reappraisal and authenticity at the trait level and both yielded null effects (English & John, 2013; Gross & John, 2003). One possible explanation for these null findings is that trait measures of reappraisal do not capture the numerous ways that emotionally-evocative situations can be reappraised. It may be that distinct reappraisal strategies impact authenticity in different ways, a possibility that the current work aimed to test.

Emotion regulation awareness and different reappraisal techniques

There are multiple techniques one can use to reappraise a situation, and these techniques may vary in the extent to which they compromise authenticity. We propose that one dimension relevant to authenticity that appears to vary between different reappraisal techniques is the degree to which people are conscious of having changed their own natural emotional responses, which we call *emotion regulation awareness*. We reasoned that being acutely aware of changing one's natural emotional response makes salient that one is not expressing their true self. Accordingly, we hypothesized that reappraisal techniques that elicit emotion regulation awareness may lead to lower levels of authenticity than those that achieve reappraisal without leading to the realization that naturally-occurring emotional reactions are being altered.

In the current work we distinguished between two types of reappraisal that theoretically differ in the extent to which they elicit emotion regulation awareness: *emotion-focused* and *perspective-based* reappraisal (Webb et al., 2012). Emotion-focused instructions have been widely used to examine the properties of reappraisal (Butler et al., 2003; Sheppes & Meiran, 2007; Shiota & Levenson, 2009). Emotion-focused reappraisal strategies instruct people to think about either their emotions or an emotion-eliciting situation in a different way with the explicit goal of changing their emotional state. Such instructions likely make people acutely aware that they are regulating their naturally-occurring emotions, which we argue in turn, decreases authenticity. In contrast, perspective-based reappraisal strategies instruct people to take a different viewpoint on an emotional event. Taking a new perspective has been shown to change the interpretation of events and therefore the emotions elicited (Ayduk & Kross, 2008; Kross & Ayduk, 2011; Richards & Gross, 2000). Importantly, the focal point of perspective-based reappraisal is the adoption of a new perspective rather than changing one's emotional experience or response. As such, perspective-based reappraisal should not elicit emotion regulation awareness to the same extent as emotion-focused reappraisal strategies, thereby leaving feelings of authenticity relatively intact.

The current research

To test our overarching hypothesis that emotion-focused reappraisal strategies would impair authenticity to the extent that they elicit emotion regulation awareness, we used an experimental approach involving a lab-based social interaction, which enabled us to speak to the causal effects of distinct reappraisal techniques on state-level authenticity. To our knowledge, the extant literature linking emotion regulation and authenticity has exclusively used a trait-level approach. Experimental, state-level research that examines the effect of emotion regulation on authenticity during *in vivo* social interactions would

advance our understanding of the interplay between emotion regulation and authenticity in at least three ways. First, work of this nature would provide causal evidence of the effect of emotion regulation on authenticity. Second, manipulating emotion regulation techniques affords the ability to make fine-grained comparisons of distinct reappraisal strategies, which existing trait measures are too global to capture. Third, an experimental, state-level approach can be used to test mediators of the effect of emotion regulation on authenticity.

For our experimental manipulation of reappraisal strategies, we used a common operationalization of emotion-focused reappraisal instructions that directs people to “remain calm and dispassionate” (Butler et al., 2003) and “adopt a neutral, analytical and objective attitude” (Sheppes & Meiran, 2007). Perspective-based reappraisal was implemented using instructions that directed people to increase their psychological distance when considering emotional experiences either by using third-person pronouns to describe experiences or adopting a “fly on the wall” perspective. These perspective-based reappraisal techniques, commonly referred to as *self-distancing* (Ayduk & Kross, 2008, 2010; Kross & Ayduk, 2008), are different from emotion-focused reappraisal in that they do not explicitly instruct people to change their emotions. We examined the effects of these emotion regulation techniques on authenticity in a social interaction in which participants related an emotionally-evocative experience to the experimenter. This context allowed us to assess both the participants’ subjective feelings of authenticity as well as observer ratings of participants’ authenticity.

In Study 1 we used a repeated-measures design that tested the effects of emotion-focused reappraisal, perspective-based reappraisal, and suppression on authenticity. Study 2 focused on comparing emotion-focused and perspective-based reappraisal in a between-subjects design and tested if emotion regulation awareness statistically mediated the effects of reappraisal strategy on authenticity. We tested three main hypotheses. First, we predicted that perspective-based reappraisal would result in higher levels of authenticity than emotion-focused reappraisal (Studies 1 & 2). Second, we predicted that emotion-focused reappraisal would result in higher emotion regulation awareness than perspective-focused reappraisal (Study 2). Third, we expected that this difference in emotion regulation awareness would statistically mediate the effect of reappraisal condition on authenticity (Study 2).

Study 1

Study 1 used a within-subject, repeated-measures design to contrast the effects of perspective-based and emotion-focused reappraisal strategies on authenticity. The context of the study was a social interaction in which participants watched an emotion-eliciting film clip, adopted an emotion regulation strategy, and then described the film clip they had just watched to the experimenter. Similar paradigms have been used to study the effect of emotion regulation on social outcomes (Butler et al., 2003; Butler, Lee, & Gross, 2007). We hypothesized that the perspective-based reappraisal condition would result in higher levels of authenticity than the emotion-focused reappraisal condition. We also included a control condition with no emotion regulation instructions, as well as a suppression condition. Given that the control condition did not instruct people to change their naturally-occurring response, we expected that it would result in relatively

high levels of authenticity. Conversely, given research showing that suppression is harmful to authenticity (English & John, 2013; Gross & John, 2003), we expected the suppression condition to result in relatively low levels of authenticity. We included these conditions as benchmarks to help characterize the results of the two focal reappraisal conditions.

Method

Participants and procedure

Sixty-five undergraduate psychology students (68% female, $M_{\text{age}} = 20.53$, $SD_{\text{age}} = 1.57$) were recruited to participate in exchange for course credit. The sample was 40% Asian, 46% White, 31% Latino, 6% Black, and 2% Pacific Islander (participants could identify multiple categories). This sample size was determined by how many participants we could collect in a single academic term with the personnel available and afforded 95% power to detect a medium-sized effect in our repeated measures design, which consisted of four trials. As illustrated in Figure 1, each trial began with participants watching an emotion-eliciting video clip on a computer screen by themselves while the experimenter waited behind a privacy screen. When the film clip ended, participants immediately reported on their affect. Next, emotion regulation instructions were presented. After indicating that they had read and understood the instructions, participants were given one minute to implement the emotion regulation technique that had been described to them. Next, the experimenter removed the privacy screen and engaged in a social interaction with the participant that consisted of the participant describing the film clip they just saw to the experimenter, who was blind to the emotion regulation instructions the participant had received. This interaction was video-recorded. After the interaction, the privacy screen was replaced, and the participants reported on their affect and subjective feelings of authenticity. At the end of each trial, participants were asked to type a description of the emotion regulation instructions they had been given as an attention check.

This procedure was repeated a total of four times. The presentation of four emotion-eliciting film clips and four sets of emotion regulation instructions were counterbalanced so that all combinations of instructions, film clips, and ordinal positions in the procedure had approximately the same cell size with the exception that the first trial was always the control condition. This was intended to orient participants to the task before giving them more complicated emotion regulation instructions.

Materials

Study 1 materials are available at https://osf.io/ngvfa/?view_only=c7475ff35ca8449481d0e3c220ffaafe.

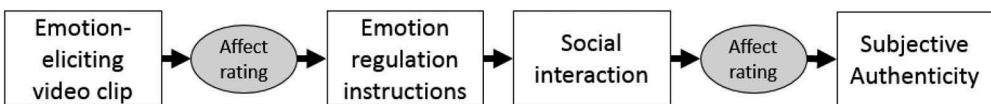


Figure 1. An illustration of a single trial in Study 1. Participants completed a total of four trials, each time with a different emotion-eliciting video clip and emotion regulation instruction.

Emotion regulation instructions

Four sets of instructions were each used once during each participant's session. The first trial was always the control condition in which participants were simply instructed to relate the film clip to the experimenter with no mention of any emotion regulation strategy, "Next you will relate to your partner as best as you can the contents of the film clip you just saw. The goal is to have your partner grasp the content of the film clip through your explanation as if they had watched it themselves." In the three emotion regulation conditions the prompt from the control condition was displayed followed by emotion regulation instructions.

Instructions in the emotion-focused reappraisal and suppression conditions were adapted from previous emotion regulation research (Butler et al., 2003; Sheppes & Meiran, 2007). The emotion-focused reappraisal instructions were: "While you talk to your partner we want you to think about your situation in such a way that you remain calm and dispassionate. Think about the film in a different way to adopt a neutral, analytical and objective attitude towards the films content." The suppression instructions were taken from previous research: "If you have any feelings as you explain the film clip, please try your best not to let those feelings show. Try to behave so that your partner does not know that you are feeling anything at all" (Butler et al., 2003).

Perspective-based reappraisal was manipulated using self-distancing instructions. Self-distanced analysis, both manipulated and assessed as an individual difference, has been linked to more adaptive emotional responses to negative events (Ayduk & Kross, 2008, 2010; Kross & Ayduk, 2011; Kross, Ayduk, & Mischel, 2005). The instructions in the perspective-based reappraisal condition, adapted from previous research (Ayduk & Kross, 2008; Kross & Ayduk, 2008; Mischkowski, Kross, & Bushman, 2012), described two ways in which people can adopt a distanced perspective. The first was a linguistic technique which described third person self-talk: "[refer] to yourself in the third person, with your own name, instead of with the pronoun I" and the second was a distanced visual, or *fly on a wall*, perspective; "... visualize yourself watching the video keeping in mind the content of the video itself. Then in your mind's eye take a few steps back. Move away from the situation to a point where you can now watch the experience unfold from a distance and see your distant self in this event."

Emotion-eliciting film clips

In affective science short film clips have been a widely-used method of eliciting emotion due to the relative ease of presentation, experimental control, and standardization that their use confers (Rottenberg, Ray, & Gross, 2007). In the current work, four film clips ranging between 150 and 180 seconds that had been validated in previous research to elicit specific emotions were selected: amusement, anger, sadness and happiness. The amusement, anger, and sadness eliciting clips were taken from the movies, *When Harry met Sally*, *Cry Freedom*, and *The Champ*, respectively, and are described by Rottenberg et al. (2007). The happiness clip depicted footage of Sarah Hughes winning the figure skating gold medal and is described in Mauss, Tamir, Anderson, and Savino (2011). These film clips can be accessed at https://osf.io/ngvfa/?view_only=c7475ff35ca8449481d0e3c220ffaafe. We included both positively and negatively-valenced film clips to explore if the effect of emotion regulation on authenticity generalizes across positive and negative contexts.

Subjective authenticity

Participants' subjective feelings of authenticity were measured using two face-valid items designed to repeatedly assess state authenticity in the context of describing film clips. The items were: *while I was talking about the film clip I felt that what I was saying did not match what I was feeling on the inside* (reversed scored), and *I think that if somebody watched my description of the film clip they would think that I was acting in an authentic way*. Participants responded to the items on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). We averaged responses to these two items into a subjective authenticity composite (average α across trials = .65, $M = 4.56$, $SD = 1.37$).

Observer-rated authenticity

Footage of each participant explaining each film clip to the experimenter was judged by coders who were blind to the study hypotheses and to the emotion regulation strategies used by participants. Coders made judgments about how authentic the participants appeared to be (*genuine, saying exactly what is on their mind*) using a seven-point Likert scale from 1 (*not at all*) to 7 (*extremely*), $M = 4.69$, $SD = 1.31$. Each clip was coded by three coders ($\alpha = .67$).

Affect

Participants reported on their affect twice – after watching the evocative film clip and after the social interaction – using a scale from 1 (*very negative*) to 7 (*very positive*). Additional items assessed in Study 1 are detailed in Section 1 of the Supplementary Materials.

Results

Five participants (7% of total) were unable to accurately recall any of the four emotion regulation instructions given to them during the attention checks and thus were excluded from the analyses. Clustering by participant was evident in both subjective and observer-rated authenticity (ICCs $\geq .66$) and so we used linear mixed-effects modeling (MIXED) procedure in SPSS using restricted maximum likelihood estimation to test our hypotheses. Table S1 in the Supplementary Materials displays the estimated marginal means of all the primary outcomes and significant differences between conditions.

Affect

To confirm that the film clips had the intended emotional effect on participants, dummy-coded valence of film clip (0 = negative, 1 = positive) was entered as a fixed effect and participant-level intercept was specified as a random effect predicting affect that participants reported immediately after seeing each clip. Results indicated that higher positive affect was reported after watching the positively-valenced film clips ($EMM = 5.68$, $SD = 1.71$) than negatively-valenced film clips ($EMM = 2.10$, $SD = 1.73$), $B = -3.58$, $t = 22.44$, $p < .001$, 95% CI [-3.90, -3.27].

We also tested if affect measured after the social interaction differed by emotion regulation condition by entering a categorical emotion regulation variable as a fixed effect and using contrast codes to compare conditions. There were no differences

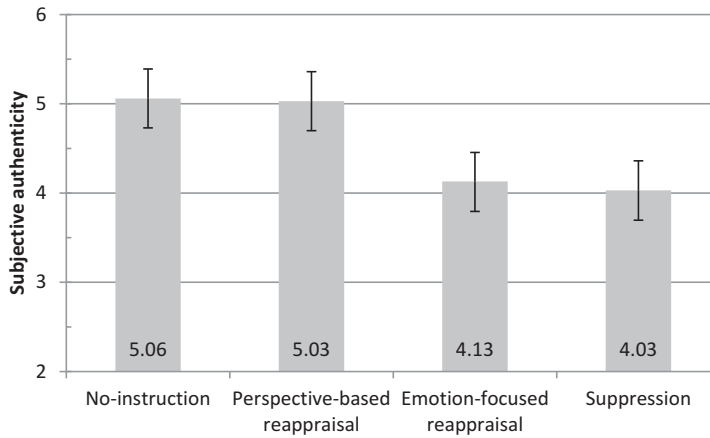
between emotion-focused reappraisal, perspective-focused reappraisal, or suppression conditions in affect reported after the social interaction, $t_s \leq 1.05$, $p_s \geq .30$. Affect at this time point was positively related to subjective authenticity, $B = .29$, $t(201.10) = 6.03$, $p < .001$, 95% CI [.20, .39], but not observer-rated authenticity, $B = -.02$, $t(203.26) = -.33$, $p = .74$, 95% CI [-.12, .08].

Finally, to characterize how emotion regulation condition related to change in affect we tested a multi-level model with affect as the outcome and time (i.e., after the film clip or after the social interaction), valence of film clip (i.e., negative or positive), and emotion regulation condition entered as predictors with random intercepts specified for participant and trial number. We found that film clip valence interacted with time, $F = 71.29$, $p < .001$ to predict affect. Simple slope analyses indicated affect significantly changed from after the film clip to after the social interaction in all types of trials. However, the change in affect was greater in trials with negative film clips, $M_{\text{difference}} = -.98$, $SE = .11$, $p < .001$, 95%CI [-1.21, .76], than trials with positive film clips, $M_{\text{difference}} = -.38$, $SE = .11$, $p < .001$, 95%CI [-.60, -.15]. This effect is consistent with findings showing that, at least in Western contexts, people are more likely to downregulate negative emotions than positive ones (Hirt & McCrea, 2000; Larsen, 2000; Miyamoto & Ma, 2011; Miyamoto, Ma, & Petermann, 2014). The three-way interaction with emotion regulation condition was not significant, $F = .50$, $p = .69$, suggesting that change in affect was not significantly different by emotion regulation condition.²

Authenticity

Subjective and observer-rated authenticity were positively related, $B = .27$, $t(232.97) = 4.13$, $p < .001$, 95% CI [.14, .41]. To test our focal hypothesis, we conducted separate analyses specifying subjective and observer-rated authenticity as the outcome of a mixed-effects model. Participant was entered as a random intercept and a categorical emotion regulation variable was entered as a fixed effect with contrasts specifying the comparisons of interest between conditions. As illustrated in Figure 2 Panel A, consistent with our hypothesis participants reported higher subjective authenticity in the perspective-based reappraisal condition ($EMM = 5.03$, $SE = .17$) than in the emotion-focused reappraisal condition ($EMM = 4.13$, $SE = .17$), $B = -.91$, $t(172.54) = -4.42$, $p < .001$, 95% CI [-1.31, -.50]. Furthermore, coders rated people as more authentic when they were in the perspective-based reappraisal condition ($EMM = 5.00$, $SE = .17$) versus the emotion-focused reappraisal condition ($EMM = 4.41$, $SE = .17$), $B = -.61$, $t(173.67) = -2.91$, $p = .004$, 95% CI [-1.01, -.20]. There were no differences between the control and perspective-based conditions, or between the emotion-focused reappraisal and suppression conditions, in either subjective or observer-rated authenticity, $|Bs| \geq .09$, $p_s \geq .64$. Importantly, these effects of emotion regulation condition on authenticity were consistent across different contexts; emotion regulation condition did not interact with film valence to predict subjective or observer-rated authenticity, $F_s \leq .66$, $p_s \geq .58$. Moreover, Section 1 of the Supplementary Materials shows that these findings hold when controlling for participant ratings of how difficult the emotion regulation instructions were to implement.

Panel A



Panel B

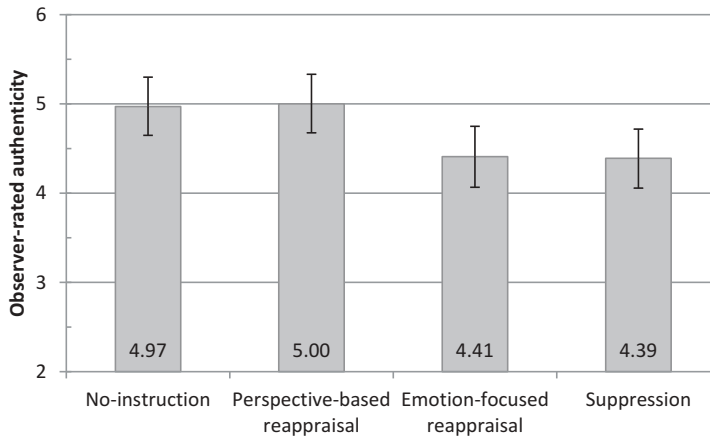


Figure 2. The effect of emotion regulation condition on self-reported (Panel A) and observer-rated (Panel B) authenticity in Study 1. Bars represent 95% confidence intervals. Estimated marginal means are displayed inside the base of the bars.

In sum, we found initial support for our hypothesis that an emotion-focused reappraisal technique that explicitly instructed people to change their natural emotional response would lead to lower authenticity than a perspective-based reappraisal technique which focused on changing one's psychological distance rather than one's emotions. We found converging evidence supporting our hypothesis with both subjective and observer-rated authenticity and demonstrated that these effects were present in both positive and negative contexts. One limitation of this study, however, is that participants in the perspective-based reappraisal condition were given a choice between two strategies (i.e. fly-on-the-wall or third-person pronouns approach). Being able to select one's preference could explain why participants felt and behaved more authentically in the perspective-based condition. We note that in the perspective-based reappraisal condition, 60% of participants chose the fly-on-the-wall technique and there were no significant differences

in subjective or observer-rated authenticity between participants who chose the fly on the wall technique versus those who chose the self-talk technique. Another limitation is that we did not directly assess people's emotion regulation awareness, which we posit explains the diverging effects of reappraisal strategies on authenticity. Finally, in this study since affect was measured after the social interaction and not right after implementation of the emotion regulation instructions it was not a pure measure of emotion regulation; therefore, analyses of whether different emotion regulation strategies impacted affect differentially should be interpreted with this caveat in mind.

Study 2

In Study 2 we aimed to test if emotion regulation awareness can explain the effect of different reappraisal techniques on authenticity. Study 2 also implemented several methodological improvements over Study 1. First, in the perspective-based reappraisal condition participants were not given a choice of which strategy they would like to adopt; they were instructed to use the fly-on-the-wall distancing technique. Second, we included additional subjective authenticity items from validated measures and improved the validity of observer-rated authenticity by including an additional, reverse-scored item. We tested three main hypotheses in this study. First, we predicted that subjective and observer-rated authenticity would be higher in the perspective-based reappraisal condition versus the emotion-focused reappraisal condition. Second, we expected that emotion regulation awareness would be lower in the perspective-based reappraisal condition compared to the emotion-focused reappraisal condition. Third, we predicted that differences in emotion regulation awareness would carry an indirect effect between reappraisal condition and subjective authenticity.

Method

Participants and procedure

The sample was 135 undergraduate psychology students ($M_{\text{age}} = 21.50$, $SD = 4.98$, 71% female) at a large West Coast public university who participated in the study in exchange for course credit. The sample was 53% Asian, 37% White, 28% Latino, 6% Black, and 1% Pacific Islander (participants could identify multiple categories). Sample size was determined by research resources; we collected as many participants as possible over the course of two academic terms with the same trained team of research assistants. This sample afforded us 72% power to detect medium sized effects of $\eta^2 = .09$. The procedure was similar to Study 1's (see [Figure 3](#)) in that participants watched the emotion-eliciting film clip alone, followed the emotion regulation instructions they were given, then engaged in a social interaction with the experimenter in which they described the film clip they saw as well as the thoughts and feelings they had about it to the experimenter. However, in Study 2 we used a between-subjects design with a single negatively-valenced film clip as the stimulus, a design that supports more straightforward tests of statistical mediation than the multi-level modeling approach used in Study 1. We chose a negative emotional context because emotion regulation is most commonly used to modify negative emotions (Gross et al., 2006).

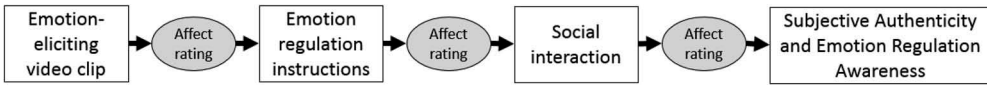


Figure 3. An illustration of the procedure in Study 2. It is largely similar to the procedure used in Study 1, but with an additional affect measurement immediately after the emotion regulation manipulation, and emotion regulation awareness assessed at the end of the trial.

Materials

Descriptive statistics for Study 2 measures can be found in Table 1 and study materials are available at https://osf.io/ngvfa/?view_only=c7475ff35ca8449481d0e3c220ffaafe.

Table 1. Descriptive statistics and correlations for Study 2 measures.

| | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 | 6 |
|---|----------|-----------|---|-----|---------|------|--------|--------|
| 1. Subjective authenticity | 5.15 | .94 | - | .10 | -.29*** | -.03 | -.02 | -.27** |
| 2. Observer-rated authenticity | 6.00 | 1.03 | | - | -.03 | .01 | .15† | -.09 |
| 3. Emotion regulation awareness | 3.50 | 1.29 | | | - | -.02 | -.12 | -.11 |
| 4. Affect after video | 5.61 | .87 | | | | - | .59*** | .29*** |
| 5. Affect after emotion regulation manipulation | 4.55 | 1.00 | | | | | - | .39*** |
| 6. Affect after social interaction | 3.90 | 1.01 | | | | | | - |

Note. † $p < .10$; * $p < .05$; ** $p < .01$; $p < .001$.

Emotion regulation instructions

Participants were randomly assigned to one of three emotion regulation conditions. In the control condition participants were instructed to sit quietly and the emotion-focused reappraisal instructions were the ones used in Study 1. As noted, to address the possibility that being able to choose between techniques in the perspective-based reappraisal condition in Study 1 might have increased authenticity, Study 2 participants in this condition were not given this choice. They were instructed to use the fly-on-the-wall technique from Study 1.

Emotion-eliciting film clip

A negative emotion-inducing film clip served as the context for the social interaction. Participants were shown a film clip that depicted work by the artist Andres Serrano from his series titled *The Morgue*, which consists of photographs of deceased people. The clip, 192 seconds in length, was set to ominous music and each photograph was displayed with its title, the cause of death, and can be accessed at https://osf.io/ngvfa/?view_only=c7475ff35ca8449481d0e3c220ffaafe. We selected this video because it was higher resolution than the clips used in Study 1, which were taken from films made before 1990, and we also expected it would be a strong elicitor of emotions.

Subjective authenticity

Beyond the items used in Study 1, in Study 2 we adapted additional items from validated authenticity scales. Participants responded to two items adapted from the self-alienation subscale of the Authenticity Scale (Wood, Linley, Maltby, Baliousis, & Joseph, 2008) on a scale from 1 = (*strongly disagree*) to 7 (*strongly agree*): *While I was talking about the film clip I wasn't sure how I was really feeling inside*, and *while I was talking about the film clip I felt out of touch with the "real me"*. Participants also reported

their state authenticity using the Real Self Overlap Scale (RSOS; Lenton, Slabu, Sedikides, & Power, 2013) which consists of seven depictions of two circles – the first labelled *Who you are right now* and the second labelled *Your real self* – overlapping to various degrees. Participants were asked to indicate which pair of circles best represents how close they feel to their real self. These five items were combined into a single measure of subjective authenticity ($\alpha = .73$) and this single factor was supported by principle axis factoring with varimax rotation. Table S3 in the Supplementary Materials displays the means of the different components of this measure and how they differ by reappraisal condition.

Observer-rated authenticity

Authenticity ratings were made by the experimenters, who were blind to emotion regulation condition, immediately after they interacted with participants. Experimenters rated how *genuine* and *inauthentic* (reversed scored) the participant seemed during the interaction using a scale ranging from 1 (*not at all*) to 7 (*extremely*). These items were combined into a single measure of observer-reported authenticity ($\alpha = .74$).

Emotion regulation awareness

Given the possibility that having participants introspect on whether they changed their naturally-occurring emotional response before the social interaction might have obscured the effect of the manipulation on authenticity, perhaps through increasing cognitive load and self-monitoring, we assessed emotion regulation awareness after participants reported on their subjective authenticity. Participants rated their emotion regulation awareness on two face-valid items, *I did nothing to change the emotions I felt in response to the film clip* (reverse scored), and *I consciously tried to change my emotions*, on a scale from 1 = (*strongly disagree*) to 7 (*strongly agree*). The first item was reverse-scored and then the two items were combined into a composite of emotion regulation awareness ($\alpha = .63$).

Affect

Participants reported their affect on a single item ranging from 1 (*very negative*) to 7 (*very positive*), which was reversed-scored so that higher numbers indicated more negative affect. Affect was assessed at three time points: after participants watched the film, after participants implemented emotion regulation strategies, and after the social interaction.

Results

Three participants did not finish the study due to technical difficulties and five participants failed an attention check embedded in the authenticity items: these eight (6%) were excluded from analyses. Correlations between authenticity measures³, emotion regulation awareness, and affect measurements can be found in Table 1, and the means of all primary outcomes and how they differ by condition are displayed in Table S2 in the Supplementary Materials. Additional items that were assessed in this study and their relationship to the manipulation and primary outcomes are described in Section 2 of the Supplementary Materials.

Authenticity

To test our first hypothesis that perspective-based reappraisal would result in higher authenticity than emotion-focused reappraisal, we conducted two separate ANOVAs with subjective and observer-rated authenticity as the outcomes, and planned contrasts comparing the emotion regulation conditions. As illustrated in Figure 4 Panel A, and consistent with our hypothesis, participants in the perspective-based condition reported significantly higher levels of subjective authenticity ($M = 5.40$, $SD = .80$) compared to participants in the emotion-focused reappraisal condition ($M = 4.93$, $SD = 1.13$), $F(1,124) = 5.11$, $p = .026$, $\eta^2 = .04$, but not control participants, ($M = 5.15$, $SD = .83$), $F(1,124) = 1.51$, $p = .22$, $\eta^2 = .01$. The control condition was also not significantly different from the emotion-focused reappraisal condition, $F(1,124) = 1.26$, $p = .27$, $\eta^2 = .01$.

In terms of observer-rated authenticity, as illustrated in Figure 4 Panel B, participants in the perspective-based condition were judged by experimenters as significantly more authentic ($M = 6.22$, $SD = .77$) than participants in the emotion-focused reappraisal condition ($M = 5.68$, $SD = 1.23$), $F(1,124) = 5.51$, $p = .02$, $\eta^2 = .04$, but not the control group ($M = 6.13$, $SD = .96$), $F(1,124) = .14$, $p = .71$, $\eta^2 = .001$. The difference between the control condition and the emotion-focused reappraisal condition was also significant, $F(1,124) = 4.37$, $p = .039$, $\eta^2 = .03$.

Emotion regulation awareness

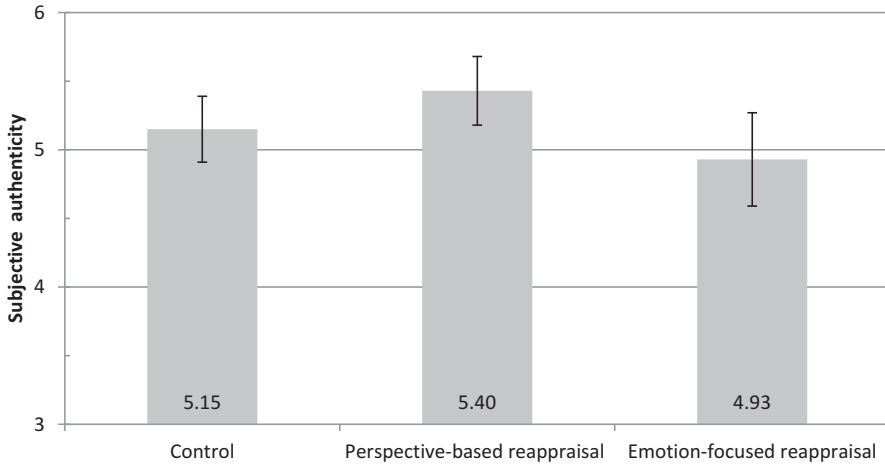
Consistent with our hypothesis, people in the emotion-focused reappraisal condition reported higher emotion regulation awareness ($M = 4.32$, $SD = 1.25$) than people in both the perspective-based ($M = 3.03$, $SD = 1.09$) and control ($M = 3.14$, $SD = 1.12$) conditions, $F(1,124) \geq 23.95$, $ps \leq .001$, $\eta^2s \geq .16$. There was no difference in emotion regulation awareness between the perspective-based and control conditions, $F(1,124) = .20$, $p = .66$, $\eta^2 = .002$.

We tested for the presence of an indirect effect of reappraisal strategy on subjective authenticity through emotion regulation awareness using the PROCESS macro for SPSS (Model 4; Hayes, 2012) to generate bias-corrected 95% confidence intervals (CIs) with 10,000 bootstrapped samples. Reappraisal condition was dummy coded (1 = perspective-based reappraisal, 0 = emotion-focused reappraisal) and entered as the independent variable. Consistent with our hypothesis, results indicated that emotion regulation awareness carried a significant indirect effect, $B = .33$, $SE = .14$, 95% CI [.12, .70] (see Figure 5).

Affect

We used a repeated-measures ANOVA with affect measurement entered as a within-subjects factor and emotion regulation condition entered as a between-subjects factor to test if there were differences in affect at any of these three time points during the study: after watching the film clip (Time 1), after the emotion regulation manipulation (Time 2), and after the social interaction (Time 3). We found a large main effect of time $F(2,254) = 175.91$, $p < .001$, $\eta^2 = .58$ such that negative affect was highest at Time 1 and decreased at each subsequent time point. However, this effect was qualified by an interaction with emotion regulation condition, $F(4, 244) = 3.35$, $p = .011$, $\eta^2 = .052$.

Panel A



Panel B

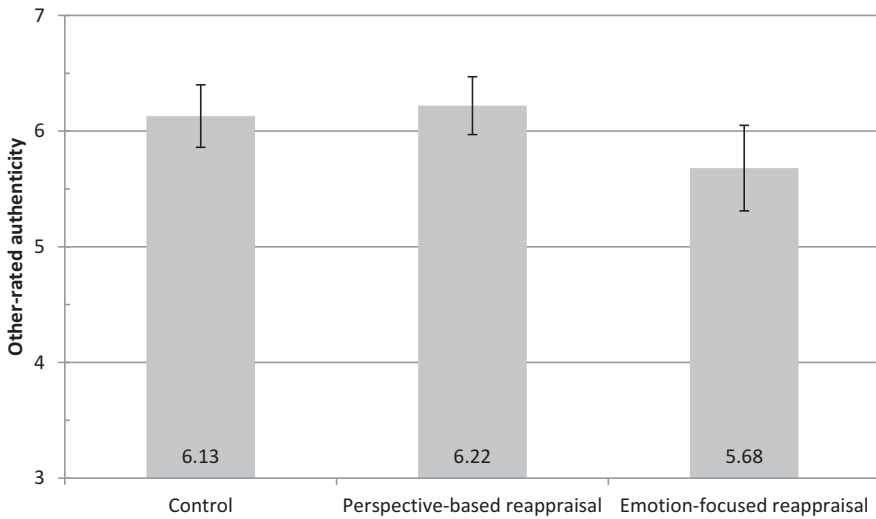


Figure 4. The effect of emotion regulation condition on subjective (Panel A) and observer-rated (Panel B) authenticity in Study 2. Bars represent 95% confidence intervals. Means are displayed inside the base of the bars.

We probed the interaction further by comparing affect between emotion regulation condition at each time point (see Figure 6). Simple main effects showed that participants in all three conditions on average reported significant decreases in negative affect from Time 1 to Time 2: perspective-based reappraisal $M_{\text{difference}} = .68$, 95% CI[.42, .94], $t = 4.68$, $p < .001$, $d = .61$; emotion-focused reappraisal $M_{\text{difference}} = 1.22$, 95% CI[.96, 1.48], $t = 9.47$, $p < .001$, $d = 1.41$; control $M_{\text{difference}} = 1.25$, 95% CI[1.01, 1.49], $t = 11.42$, $p < .001$, $d = 1.41$. However, the 95% CIs indicate that this decrease in negative affect between Time 1 and 2 was smaller in the perspective-based reappraisal condition than in the emotion-

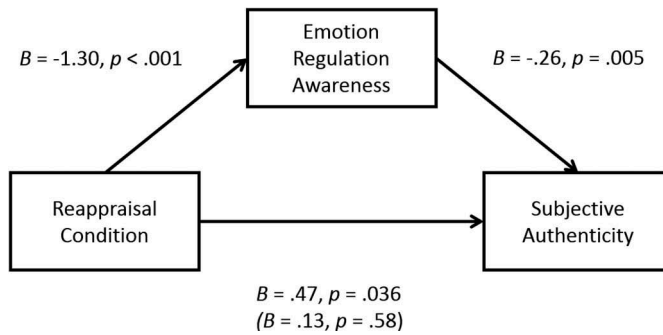


Figure 5. A test of the indirect effect of reappraisal condition on subjective authenticity through emotion regulation awareness. The independent variable is dummy-coded with perspective-based reappraisal coded as 1, and emotion-focused reappraisal coded as 0.

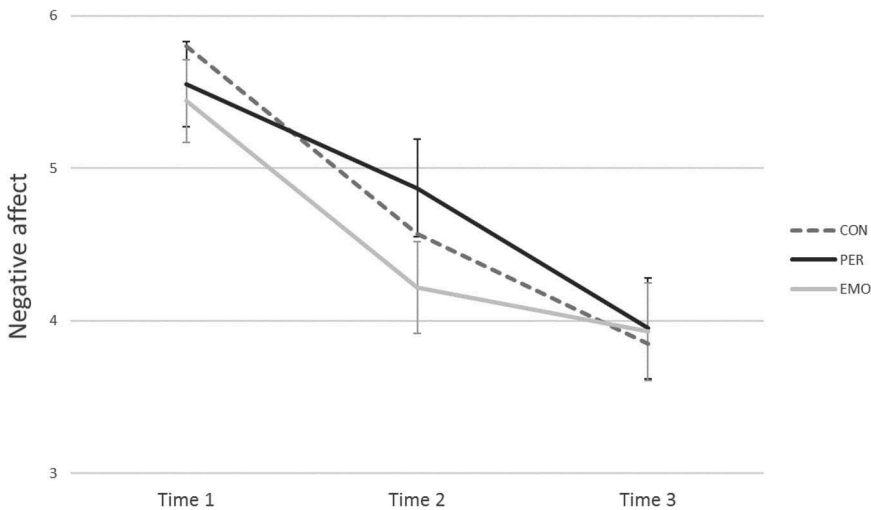


Figure 6. Reported negative affect by emotion regulation condition. Time 1 was after the evocative film clip, Time 2 was after the emotion regulation manipulation, and Time 3 was after the social interaction. CON = control condition; PER = perspective-based reappraisal condition; EMO = emotion-focused reappraisal condition. Errors bars represent 95% CIs. The control condition is not significantly different from either reappraisal condition at any point, so the error bars are omitted for visual clarity. The scale ranged from 1 to 7, but for display purposes the y-axis is magnified. Values above 4 (*neutral*) indicate negative affect.

focused reappraisal condition. This difference appeared to be due to people in the perspective-based reappraisal condition reporting significantly more negative affect ($M = 4.87, SE = .16$) than people in the emotion-focused reappraisal condition ($M = 4.22, SE = .15$) after the emotion regulation manipulation, $t(79) = 2.95, p = .004, \eta^2 = .07$. There were no differences between conditions in negative affect at Time 3, $ps > .72$.

In light of these differences, an alternative explanation of the observed effects of reappraisal condition on authenticity is that perspective-based reappraisal might make

people feel more authentic because it is changing less of people's natural emotional response than emotion-focused reappraisal. We thus tested if these differences might explain the observed effects of emotion regulation on authenticity. We used the same approach to test for an indirect effect as above, specifying Time 2 affect as the mediator in the PROCESS macro (Model 4; Hayes, 2012), with reappraisal condition entered as a dummy-coded predictor (1 = perspective-based reappraisal, 0 = emotion-focused reappraisal), subjective authenticity as the outcome, and Time 1 affect as a covariate. Results showed that there was no significant indirect effect of reappraisal condition on subjective authenticity through affect after the emotion regulation manipulation, $b = -.03$, $SE = .08$, 95% CI $[-.18, .12]$.

In sum, Study 2 replicated the key finding from Study 1, such that participants in the perspective-based reappraisal condition reported feeling more authentic and were judged as more authentic by others compared to participants in the emotion-based reappraisal condition. Extending this finding, we also found that participants in the emotion-focused reappraisal condition reported greater emotion regulation awareness than those in the perspective-based reappraisal conditions, and that this difference carried an indirect effect between reappraisal condition and subjective authenticity. We also found evidence that people in the emotion-focused reappraisal condition were downregulating their negative affect more than people in the perspective-based reappraisal condition. However, we found that this difference did not statistically mediate the effect of reappraisal condition on authenticity.

General discussion

At first glance authenticity and emotion regulation seem to be in conflict. In the current research we posed the question: are there ways that people can change their naturally-occurring emotional response to an evocative situation while at the same time leaving their authenticity intact? To provide the first investigation of this possibility, we examined how two forms of reappraisal that have been well-established in the literature – perspective-based reappraisal and emotion-focused reappraisal – differed in their effect on state feelings of authenticity. A key difference in these strategies is that emotion-focused reappraisal instructions explicitly give people the goal of changing their emotions and perspective-based reappraisal instructions do not. We theorized that when people are aware of changing their naturally-occurring emotional response they feel less authentic. Based on this difference we expected that when using emotion-focused reappraisal people would be more aware that they were changing their naturally-occurring emotions, thus resulting in lower subjective reports of authenticity than perspective-based reappraisal.

Across two studies, we found converging evidence that people both reported higher authenticity and were judged as being more authentic by others after using perspective-based reappraisal compared to emotion-focused reappraisal. Study 2 extended these findings by showing that this effect is statistically mediated by people's self-reported emotion regulation awareness. Specifically, participants in the perspective-based reappraisal condition reported lower emotion regulation awareness, which in turn was related to higher authenticity. In Study 2 we also found that immediately after the emotion regulation manipulation people reported less negative affect in the emotion-

focused reappraisal condition than the perspective-based reappraisal condition. This raised the possibility that in the perspective-based reappraisal condition more of participants' natural emotional response was left intact, which explains why participants felt and acted more authentically. However, we found that differences in affect did not statistically mediate the effect of reappraisal condition on authenticity, making this alternative explanation less likely. We note that while these results suggest that emotion regulation awareness is related to authenticity, due to their cross-sectional nature they lack time precedence and therefore cannot speak to the causal nature of the relationship. Further research using experimental mediational designs (Pirlott & Mackinnon, 2016) in which emotion regulation awareness is manipulated is needed to test if it causally impacts authenticity.

Across both studies we found that authenticity in the control conditions was high, but that the change in affect in the control condition was not significantly different from that of the emotion regulation conditions. To interpret this pattern, it is important to note that while the control conditions did not contain emotion regulation instructions, this does not necessarily mean that control participants did not regulate their emotions. In the absence of emotion regulation instructions it is possible that control participants used emotion regulation techniques consistent with their own tendencies and preferences. Thus, while the control conditions in the current work served the purpose of demonstrating how authentic people felt when they were free to deal with their emotions as they pleased, they cannot be used as no-regulation benchmarks to judge whether emotion regulation occurred in the reappraisal conditions. In future work, the inclusion of a condition that instructs people to use a strategy that is known to leave subjective emotions relatively intact (e.g., self-immersed analysis; Ayduk & Kross, 2008, 2010; Kross & Ayduk, 2008) would make it possible to characterize the extent that comparison emotion regulation conditions impact affect.

One challenge in the current work was the measurement of state authenticity in a way that was appropriate for the laboratory-based, experimental context in which people were instructed to change their naturally-occurring responses to emotion-eliciting videos. In Study 1 we used ad hoc items designed to be task relevant and sensitive to repeated measurement over a short period of time, and in Study 2 we added items from established authenticity measures to capture people's global sense of feeling authentic. However, one prominent theoretical perspective maintains that there are three components of authenticity: lack of self-alienation, that is, feeling in touch with one's "real self"; authentic living in which one's behaviors are consistent with one's values and beliefs; and the extent that people accept external influence, or have their behavior shaped by other's needs and wants (Wood et al., 2008). A limitation of the current work is that all of these components were not assessed, and so an open area of inquiry is examining whether different emotion regulation techniques are differentially related to different facets of authenticity.

Across both studies we demonstrated that different reappraisal techniques differentially impact observer ratings of authenticity. However, the behaviors that observers base their judgements of authenticity on remains an open question for future research. To speculate, we posit that there may be three ways by which actors' emotion regulation might influence perceivers' ratings of authenticity. One way may be through "emotional leakage," a term used in the deception literature to describe emotion

expressions incongruent with the intended display (Ekman & Friesen, 1969; Porter & Ten Brinke, 2008; Porter, Ten Brinke, & Wallace, 2012). When detected, such emotional leakage signals that a person's behavior is mismatched with their true self, and is thought to explain the detrimental effects of suppression on social relationships (English, John, Srivastava, & Gross, 2012; Srivastava et al., 2009).

A second way emotion regulation may impact judgements of authentic behavior is when emotions are successfully downregulated, but in contexts in which perceivers expect emotion expression. For example, at a funeral of a loved one, a person who successfully downregulates their emotion and thus, whose lack of negative emotion display is completely authentic, may still be judged as inauthentic by observers because they expect some degree of negative expressivity. Emotion display norms have been found to vary by culture (Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997; Matsumoto, 1990), and so future work in the domain of emotion regulation and authenticity should carefully consider social norms in the designs of their studies.

A third way that emotion regulation might impact observer-rated authenticity is through the introduction of cognitive load by emotion regulation awareness. Studies have shown that when people suppress their emotion expressions, they expend cognitive resources by constantly monitoring whether their efforts are successful, which leads to more distraction and less social engagement (Richards, Butler, & Gross, 2003; Richards & Gross, 1999). Emotion regulation awareness may similarly create a cognitive load and self-monitoring that leads to behavior that is judged as inauthentic. While outside the scope of the current project, testing the pathways by which actors' emotion regulation impacts observers' ratings of authenticity is an important future research direction.

To the best of our knowledge, the present studies represent the first experimental investigation of the effects of distinct reappraisal strategies on authenticity. As such, the extent to which the findings presented here generalize to populations other than US college students is an important open question. As the stability of people's self-representations – which have been found to be significantly correlated with authenticity – have been found to fluctuate over different stages of adulthood (Diehl, Jacobs, & Hastings, 2006), it is possible that the effects of different reappraisal strategies on authenticity may also vary across the lifespan. In a similar vein, given that different cultures have different norms related to the experience and expression of emotions (Kitayama et al., 1997; Matsumoto, 1990) it may be the case that culture moderates the effect of different reappraisal strategies on authenticity. More research is needed to examine if the findings from the current work generalizes to people of different ages and cultures.

In a related vein, while in the current work we found consistent effects across both positive and negative film clips, more research is needed to determine if the observed relationships between emotion regulation and authenticity generalize to other emotion-eliciting contexts. Just as reappraisal can have costs (Troy, Shallcross, & Mauss, 2013) and suppression can have benefits (Brockman, Ciarrochi, Parker, & Kashdan, 2017) depending on the context in which they are used, it is possible that the relationship between emotion regulation and authenticity is similarly context-dependent. Theory suggests that people who modify their natural emotional responses and engage in self-monitoring could feel highly authentic if these actions were congruent with the operation of their true selves (Kernis & Goldman, 2006). For example, down-regulating negative emotion during an interview for a highly desirable job may lead to

high subjective authenticity because it is consistent with the self-determined goal of trying one's best to get the job. Future research using approaches such as situation sampling and daily diaries may identify similar situations that people encounter that would represent boundary conditions to the effects described in the current work.

Another caveat of the current work is that only two specific techniques are represented out of many different strategies that fall under the general umbrella term of reappraisal. We selected the emotion-focused reappraisal instructions based on the criteria that they had been used previously in the emotion regulation literature (Butler et al., 2003; Sheppes & Meiran, 2007) and they provided a clear contrast to the perspective-based instructions. However, the literature abounds with variations of reappraisal instructions, including strategies that combine emotion-focused and perspective-based reappraisal strategies (Richards & Gross, 2000), and it would be impractical to test the effects of every permutation on authenticity. One tractable solution suggested by the current work is the identification of key factors that different instructions may have in common. We identified emotion regulation awareness as a factor that impacts authenticity: identifying other characteristics shared between discrete reappraisal techniques may help create a taxonomy of reappraisal that would both organize the literature and help us better understand for whom and under what circumstances different reappraisal strategies are most beneficial.⁴

In conclusion, the current work demonstrated for the first time that distinct reappraisal techniques may differentially impact authenticity, an important component of personal well-being and social relationships. It also suggests that emotion regulation and authenticity are not always in direct opposition. Emotion regulation techniques that do not make people aware they are changing their naturally occurring emotional response appear to leave authenticity intact.

Notes

1. The distinction that the Gross (1998a) process model of emotion regulation makes between response-focused and antecedent focused strategies is analogous to that made in the occupational literature by Hochschild (1979) differentiating between "surface" and "deep" acting in emotional labor.
2. Although the three-way interaction between time, film valence, and condition was not significant we examined simple slopes to characterize how affect changed in each condition. Descriptively, across emotion regulation trials the largest change in affect occurred in the perspective-based reappraisal condition in trials with negative film clips, $F(1, 227.35) = 23.95, p < .001, \eta_p^2 = .10$; and the smallest change was found with perspective-based reappraisal in trials with positive film clips, $F(1, 227.35) = 2.97, p = .086, \eta_p^2 = .01$. In control trials there was evidence that affect changed in trials with negative film clips, $F(1, 250.32) = 22.29, p < .001, \eta_p^2 = .09$, but not trials with positive film clips, $F(1, 230.39) = .35, p = .55, \eta_p^2 = .001$, which is consistent with findings that people tend to downregulate negative but not positive emotions.
3. Unlike Study 1, in Study 2 subjective and observer-rated authenticity was not significantly correlated. However, this null finding seemed to be caused by three outliers with high subjective authenticity and low observer-rated authenticity that were found to be exerting high influence. The relationship between subjective and observer-rated authenticity is significant when omitting these cases, $r = .21, p = .017$.
4. Another feature that emotion regulation techniques may share is the degree that they lead people to decenter, that is, view their thoughts and feelings as transient events. Decentering has been described as a key component of mindfulness (Bishop et al., 2006).

Initial trait-level evidence supports that decentering may in part explain why the use of both mindfulness and cognitive reappraisal is associated with lower social anxiety (Hayes-Skelton & Graham, 2013). Mindfulness and cognitive reappraisal have very infrequently been directly compared using experimental approaches (but see Lalot, Delplanque, & Sander, 2014), and so this is a promising open area of inquiry in terms of finding common substrate among emotion regulation strategies.

Disclosure statement

No potential conflict of interest was reported by the authors.

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