

Examining Emotional Tool Use in Daily Life

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Emotions such as anger, gratitude, envy, and pride can be thought of as tools: They tend to serve context-specific functions in daily life. Prior work has shown that people *can* use emotions as tools in laboratory contexts, yet it is unclear whether people *do* use emotions as tools in daily life by intentionally trying to feel or express emotions that could yield context-specific beneficial outcomes. We examined this issue in 6 studies (total $N = 1,409$) in which participants (a) identified scenarios where specific emotions typically function as tools, (b) recalled episodes of emotional tool use, and (c) reported on emotional tool use in daily life via experience-sampling under experimental instructions. We found that people regularly used emotions as tools in daily life, but that people used positive emotions as tools much more frequently than negative emotions. Yet, when people used positive emotions as tools, this led to less beneficial outcomes than when participants felt positive emotions reactively—in part because using positive emotions as tools felt inauthentic—whereas using negative emotions as tools led to more beneficial outcomes than feeling negative emotions reactively. These findings point to a fascinating paradox: Although people are more willing to use positive (vs. negative) emotions as tools, these choices may not lead people to garner maximal possible benefits of positive emotions, while preventing people from capitalizing on the benefits of using negative emotions as tools. We discuss implications of this work for incorporating emotional tool use into theories of emotion regulation.

Keywords: authenticity, emotion, emotion function, emotion regulation

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Emotions such as anger, gratitude, envy, and pride can be thought of as tools—responses that help people solve context-specific problems in social life (e.g., Keltner & Haidt, 2003; Lench, 2018; Shariff & Tracy, 2011; Shiota et al., 2014; Stellar et al., 2017). Although debate exists as to whether emotions have become tools as a result of innate, evolved functionality or because people have learned to associate them with beneficial outcomes (e.g., Barrett, 2012; Moors, 2017), there is robust evidence that emotions tend to serve beneficial purposes in daily life. For example, displaying anger during a negotiation typically elicits favorable concessions (Andrade & Ho, 2009; van Kleef, De Dreu, & Manstead, 2004), expressing gratitude toward a romantic partner typically increases relationship satisfaction (Algoe, Fredrickson, & Gable, 2013; Algoe, Kurtz, & Hilaire, 2016), feeling envy typically motivates people to attain a desired object or attribute of another person (Lange & Crusius, 2015; van de Ven, Zeelenberg, & Pieters, 2009), and feeling proud typically motivates hard work

and calculated persistence toward a goal (Weidman, Tracy, & Elliot, 2016; Williams & DeSteno, 2008).

Whether innately functional or socially learned, the fact that emotions typically serve as tools has clear implications: If emotions are tools, then they are most usefully deployed (i.e., experienced or expressed) in contexts in which their functional purposes match situational demands. Using the examples above, anger is likely to be most useful when negotiating, gratitude is likely to be most useful when interacting with a romantic partner, envy is likely to be most useful when one wishes to obtain something another person has, and pride is likely to be most useful when one wants to accomplish a goal.

Prior work has shown that people *can* effectively use emotions as tools in laboratory contexts (see Tamir, 2009b, 2016, for reviews). Here we examine a distinct question, namely whether people *do* use emotions as tools in daily life (Mook, 1983). We define emotional tool use as intentional attempts to try and feel or express a certain emotion because it is expected to be useful—in terms of helping to accomplish a specific goal—in a given context. We further seek to answer two questions regarding potential asymmetries across positive and negative valence in the prevalence and efficacy of emotional tool use: (a) Do people use positive emotions as tools more frequently than negative emotions in daily life? and (b) Does using positive versus negative emotions as tools—compared with feeling these emotions in a more reactive manner—have distinct implications for the likelihood that those emotions bring about beneficial outcomes? We elaborate on each of these possibilities below.

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All materials, participant instructions, data, and syntax are available on the Open Science Framework (<https://osf.io/tvnmj/>).

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Do People Use Positive Emotions as Tools More Frequently Than Negative Emotions?

People have a strong and often chronic desire to feel positive emotions (e.g., Larsen, 2000). When asked to reflect on the past day's events or their desired emotions throughout the day, people report wishing to feel more pleasant emotion and less unpleasant emotion (Kämpfe & Mitte, 2009; Riediger, Schmiedek, Wagner, & Lindenberg, 2009). Furthermore, most emotion regulation episodes involve trying to get rid of a negative emotion (Gross, Richards, & John, 2006), a trend which is reflected in emotion regulation science: A comprehensive meta-analysis of experimental tests of the efficacy of emotion regulation strategies found that more than 90% examined people's attempts to reduce the intensity of negative emotions (Webb, Miles, & Sheeran, 2012), and a recent meta-analytic examination of people's dispositional tendencies to engage in emotion regulation strategies focused exclusively on strategies meant to help rid people of negative emotional experiences (Naragon-Gainey, McMahon, & Chacko, 2017).

A likely result of the pervasive preference for positive emotions is that people will use positive emotions as tools more frequently than negative emotions in daily life: To use an emotion as a tool, one likely must believe that this emotion is worthwhile to feel. Yet this possibility to date has received little empirical examination. Tamir and colleagues have shown that people *can* use emotions as tools in laboratory contexts. For example, they have demonstrated that people can use emotions as tools in the case of anger (Tamir, Mitchell, & Gross, 2008), fear (i.e., Tamir & Ford, 2009), sadness (i.e., Hackenbracht & Tamir, 2010), and happiness (i.e., Tamir, 2009a), and that the decision to use emotions as tools can be driven by conscious considerations of the extent to which emotions might be useful (Tamir & Ford, 2012). However, the only study of which we are aware to have examined whether people *do* use specific emotions as tools in specific daily life contexts examined people's preferences for feeling only two emotions (anger and happiness) across only two broadly defined contexts (competition and collaboration; Kim, Ford, Mauss, & Tamir, 2015).

Goal 1 of the present research was therefore to examine the frequency with which people use a broad spectrum of emotions as tools across a wide range of situations, and to examine this process as it unfolds in daily life. In line with the aforementioned finding that people prefer positive emotions (vs. negative emotions), we predicted that people would use positive emotions as tools more frequently than negative emotions.

Does Using Positive Versus Negative Emotions as Tools Have Distinct Implications?

At face value, the possibility that people may use positive emotions as tools more often than negative emotions is cause for celebration: Feeling frequent positive emotions (and infrequent negative emotions) is a central component of well-being (Bussneri & Sadava, 2011; Diener, 1984), and positive emotions have considerable downstream benefits in many life domains (e.g., Fredrickson, 2001; Lyubomirsky, King, & Diener, 2005; Pressman & Cohen, 2005). Yet, positive emotions might not function in quite the same way when they are used as tools. This is because using a positive emotion as a tool may produce feelings of inauthenticity, in that one may enact or force an emotion experience that is not in

line with their genuine inner experience (e.g., surface acting; Hochschild, 1983; Schmader & Sedikides, 2018). Extensive evidence suggests that feeling inauthentic leads to a host of anxiety, stress, and undesirable feelings and behaviors (e.g., Fleeson & Wilt, 2010; Jongman-Sereno & Leary, 2016; Lenton, Bruder, Slabu, & Sedikides, 2013) and that chronic inauthenticity in the context of emotional experiences can degrade social relationships (English & John, 2013). Inauthenticity could therefore turn a positive emotional experience sour by signaling to the individual that the feeling is not really so good after all and in turn potentially invalidating any positive outcomes that stem from the emotional episode. These considerations point to an intriguing possibility: Using positive emotions as tools (compared with feeling positive emotions reactively) may lead to less beneficial outcomes given that doing so likely engenders feelings of inauthenticity.

What about negative emotions? On one hand, like positive emotions, using negative emotions as tools (compared to feeling them reactively) will likely also feel inauthentic. This could put a psychological damper on the functional outcomes that often arise from context-specific negative emotional experiences. On the other hand, inauthenticity might not have the same pernicious effect for negative emotions as it does for positive emotions. This is because people have an intuitive lay understanding that negative emotions are typically undesirable and maladaptive (Gross et al., 2006; Kämpfe & Mitte, 2009; Riediger et al., 2009). As a result, if one feels inauthentic while experiencing a negative emotion, this inauthenticity might signal that the negative emotional episode is not really so bad after all, particularly if the person deliberately chose to feel the negative emotion for instrumental purposes. The person in turn might discount the displeasure that typically comes with a negative emotion. If inauthenticity has this ironically helpful effect when people use negative emotions as tools, it may augment the functional benefits that people gain from deploying negative emotions as tools in appropriate contexts.

In line with these considerations, Goal 2 of the present research was to test two possibilities. First, we tested whether using positive emotions as tools—compared with feeling them more reactively—in fact leads to less beneficial outcomes. We further examined whether feelings of inauthenticity statistically mediate this link. Second, we tested the possibility that using negative emotions as tools enhances the likelihood that these emotions tend to produce beneficial outcomes compared with reactively feeling negative emotions.

The Present Research

We have raised the following possibilities: (a) people use positive emotions as tools more frequently than negative emotions; (b) compared with feeling positive emotions reactively, using positive emotions as tools leads to less beneficial outcomes, in part because of feelings of inauthenticity; and (c) compared with feeling negative emotions reactively, using negative emotions as tools enhances the likelihood that these emotions produce beneficial outcomes. These three propositions together raise the possibility of a fascinating paradox: People may strive to use positive emotions as tools even though doing so may be less beneficial than allowing these emotions to play out authentically, whereas people may underuse negative emotions as tools even though using these emotions as tools can help maximize their beneficial outcomes.

We conducted six studies to explore this possibility. Study 1 provides an initial descriptive examination of emotional tool use in daily life, including why and how people use emotions as tools. Studies 2 and 3 explore whether people use positive emotions as tools more frequently than negative emotions: Study 2 examines a likely essential prerequisite to using emotions as tools (people's beliefs about the contexts in which it would be appropriate to use positive and negative emotions as tools), and Study 3 uses experience sampling to assess the frequency with which people in fact use positive and negative emotions as tools in daily life. Studies 4a and 4b use a recall-based paradigm to provide an initial test of whether using positive versus negative emotions as tools has different implications for the beneficial outcomes people experience from those emotions, and whether authenticity plays a role in shaping these differential outcomes. Finally, Study 5 uses an experimental manipulation of emotional tool use, combined with an intensive experience sampling protocol, to examine the differential implications of using positive versus negative emotions as tools in real-time across daily life.

To prioritize replicability, we employed large sample sizes across studies, and we replicated several findings across multiple studies. To prioritize generalizability, we recruited samples of both undergraduate students and adults via Amazon MTurk. To prioritize transparency, in each study, we report how we determined our sample size, as well as all data exclusions, all manipulations and conditions, and all measures. All materials, participant instructions, data, and syntax are available on the Open Science Framework (<https://osf.io/tnmvj/>). Ancillary measures from each study are reported in the [online supplemental materials](#). Each study reported below was approved under one of the following IRB applications: (a) University of Michigan, HUM00135356 ("Using Emotions as Tools - Experience-Sampling") and (b) University of Michigan, HUM00136075 ("Using Emotions as Tools—Vignette").

Study 1

Study 1 provides an initial descriptive examination of emotional tool use in daily life, including why and how people use emotions as tools. We undertook this descriptive examination in light of the fact that little work has examined emotional tool use in daily life. Participants recalled episodes during which they used emotions as tools, and we (a) content-coded these narratives to ascertain the motives that drove people to use emotions as tools (e.g., accomplishing a task; influencing a relationship; [Kalokerinos, Tamir, & Kuppens, 2017](#); [Tamir, 2016](#)) and (b) assessed the strategies people deployed when using emotions as tools (e.g., reappraisal, situation selection; [Brans, Koval, Verduyn, Lim, & Kuppens, 2013](#); [Kalokerinos, Résibois, Verduyn, & Kuppens, 2017](#)).

Method

Participants. Two hundred thirty-four individuals completed the study, including 117 MTurk workers and 117 University of Michigan students. We excluded 28 participants (12% of the original sample; $n = 16$ MTurk workers; $n = 12$ students) for not following the instructions of our writing prompt (i.e., copying and pasting a stock paragraph about emotion; writing nonsense text), leaving a total of 206 participants ($n = 101$ MTurk workers, 62%

women, $M_{\text{age}} = 36.97$, $SD = 10.45$; $n = 105$ students, 29% women, $M_{\text{age}} = 18.95$, $SD = 1.25$). We arrived at our target sample size with the goal of having a ratio of approximately 20 participants for every one item in our planned exploratory factor analysis (as described below, we planned to include 11 items; [Costello & Osborne, 2005](#); [Henson & Roberts, 2006](#)).

Procedure. Participants were told that we were interested in times when a person intentionally tries to feel a certain emotion, because he or she thinks this emotion might be useful to feel in a given situation. Participants were told that this is a completely natural way to feel emotion, and they were given several examples of this phenomenon that were consistent with prior work on emotion function (e.g., "we might try to make ourselves feel proud because it promotes hard work and persistence"; [Williams & DeSteno, 2008](#)). Participants were told that they would be writing about a prior episode during which they tried to feel an emotion because they anticipated that it would be useful.

Participants were then randomly assigned to recall one of four positive or negative emotions (valence was manipulated between-subjects). Positive emotion options were authentic pride, compassion, gratitude, and love, and negative emotion options were anger, anxiety, envy, and guilt. Emotion options were each represented with two adjectives, taken from recent work uncovering the words most closely associated with each emotion ([Harmon-Jones, Bastian, & Harmon-Jones, 2016](#); [Lange, Weidman, & Crusius, 2018](#); [Tangney & Dearing, 2002](#); [Tracy & Robins, 2007](#); [Weidman & Tracy, 2020](#)). For example, the response option corresponding to authentic pride was *accomplished and successful* (see the [online supplemental materials](#) for full descriptions). These sets of adjectives were also used to represent the eight emotions in question in Studies 2–5.

Motives. Participants were asked to answer two open-ended questions about their experience: (a) "Why did you intentionally try to make yourself feel [emotion]?" and (b) "How did you go about intentionally trying to make yourself feel [emotion]?" For each question, the selected emotion response option was piped into the bracketed section.

Open-ended responses were coded by the first author and two research assistants as reflecting one of four utilitarian motives included in [Tamir's \(2016\)](#) taxonomy: (a) performance (i.e., to accomplish a task); (b) social (i.e., to enhance a relationship); (c) epistemic (i.e., to gain information about the self or the world); and (d) eudaimonic (i.e., to grow as a person; see also [Kalokerinos, Tamir, & Kuppens, 2017](#)). If a given set of narratives did not fall in one of these four categories, coders could instead classify it as hedonic motivation (i.e., to feel good; see the [online supplemental materials](#) for full coding instructions). If at least two of the three coders assigned a set of narratives to a given motive category, we retained that categorization. If all three coders disagreed—which occurred for only eight narratives (4%)—they met to resolve discrepancies and reach a consensus categorization. Coders showed strong agreement ($M_{\text{agreement}} = .79$; $M_{\text{kappa}} = .71$).

Strategies. Participants considered 11 strategies they may have engaged in to make themselves feel the selected emotion. We wrote these 11 items with the goal of representing a broad and inclusive set of strategies typically studied in the emotion regulation domain, including situation selection ("I engaged in a specific activity"), situation modification ("I changed something about the activity I was already doing"), distraction ("I thought about some-

thing unrelated to what I was feeling or doing”), cognitive reappraisal (“I tried to think differently about the way I was feeling” and “I tried to think differently about the activity I was doing”), suppression (“I suppressed the outward expression of my current feelings”), concentration (“I focused on what I was currently feeling and doing”), reconstrual (“I tried to make sense of my feelings”), distancing (“I tried to adopt a more detached, objective perspective on the situation”), venting (“I tried to let my feelings out by venting”), and outwardly expressing the intended emotion (“I tried to outwardly express the emotion I wanted to feel”; e.g., Bushman, 2002; Gross, 1998, 2015; Hochschild, 1983; Kalokerinos, Résibois, et al., 2017; Kross, Ayduk, & Mischel, 2005; Webb et al., 2012). Participants rated their agreement with each statement (1 = *disagree strongly*; 5 = *agree strongly*; see Table S1 in the online supplemental materials for descriptive statistics).

Results

What motivates people to use emotions as tools? Frequencies with which each motive was observed are displayed in Figure 1 and Table S2 in the online supplemental materials. Across all emotions, social motives (39%) and performance motives (36%) were observed much more frequently than epistemic motives (8%) and eudaimonic motives (2%).

We also found several asymmetries across positive and negative emotions. For positive emotions, social motives (50%) were observed more frequently than performance motives (20%; $z = 4.45$, $p < .001$). In contrast, for negative emotions, performance motives (52%) were observed more frequently than social motives (29%; $z = 3.36$, $p < .001$).

Next, eudaimonic motives were observed only for negative emotions (15%)—a finding driven primarily by anxiety—

whereas eudaimonic motives were observed only for positive emotions (3%), although as noted above they were extremely rare. Finally, we observed hedonic motivation in only a small percentage of instances (15% across all emotions) and, not surprisingly, these were nearly exclusive to positive emotions (87%). We observed no differences in motive use across our MTurk and student samples.

What strategies do people deploy when using emotions as tools? To examine the structure of the 11 emotion regulation strategies reported above, we ran exploratory factor analysis (EFA) using the *psych* package in R (Revelle, 2018), allowing factors to be correlated with oblimin rotation. We chose EFA over alternative approaches (e.g., grouping factors based on researcher intuition or classifications in prior literature) given that Study 1 aimed to descriptively map how emotional tool use operated on the ground in daily life. A predominantly empirical method such as EFA therefore seemed appropriate.

Parallel analysis suggested that we retain four factors (see Table 1). Inspection of item loadings suggested that each factor captured a coherent strategy. Factor 1 captured concentration (e.g., “I tried to make sense of my feelings”), factor 2 captured strategic expression (e.g., “I tried to outwardly express the emotion I wanted to feel”), factor 3 captured reappraisal (e.g., “I tried to think differently about the way I was feeling”), and factor 4 captured situation selection (e.g., “I changed something about the activity I was already doing”). Of note, we did observe a slight difference in this factor structure across our MTurk and student samples, namely that the strategic expression factor emerged in the MTurk sample but not the student sample (see the online supplemental materials for further details).

Importantly, correlations between factor scores representing each strategy were relatively weak on average ($M = .12$, range = .05–.25; see Table 1). These findings suggest that each of the four strategies could conceivably be deployed in tandem with any other strategy in service of using an emotion as a tool during a specific episode.

To compare the extent to which each strategy was deployed across positive and negative emotions, as well as individual emotions, we computed factor scores and compared mean levels of these scores across positive and negative emotions (see Table S3 in the online supplemental materials). Unlike with motives, we found no significant differences in the extent of each strategy’s use across positive versus negative emotions ($t_s < 1.50$, $p_s > .13$, $d_s < .21$). Furthermore, we found no significant variability in strategy use across individual emotions ($F_s [7, 198] < .98$, $p_s > .45$). These results suggest that people drew on similar strategic repertoires to use a broad spectrum of positive and negative emotions as tools.

Discussion

Study 1 provides an initial descriptive examination of emotional tool use in daily life, including insight into why and how participants use emotions as tools. Building on prior work examining instrumental emotion regulation motives in daily life (Kalokerinos, Tamir, & Kuppens, 2017), we found that participants primarily reported using positive emotions as tools to influence relationships (i.e., social goals), whereas they primarily use negative emotions as tools to accomplish tasks (i.e., performance goals). Participants

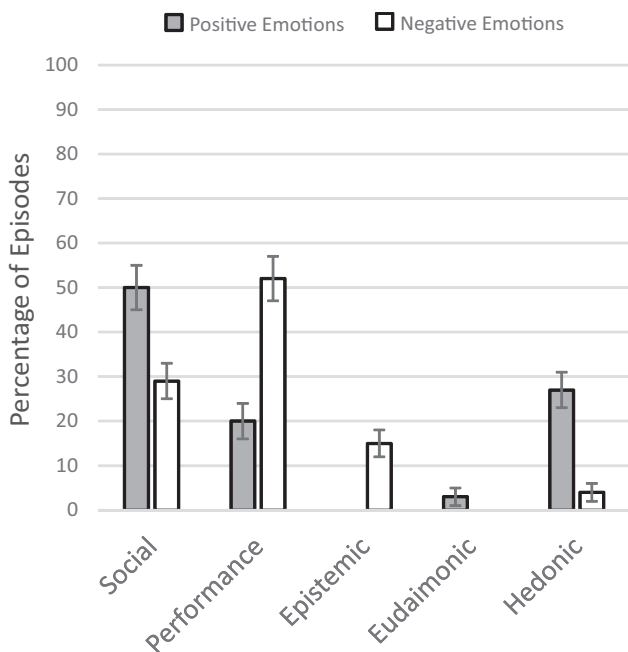


Figure 1. Motives by emotion valence (Study 1). Error bars represent \pm SE.

Table 1
Factor Analysis of Emotion Regulation Strategies (Study 1)

	Concentration	Strategic expression	Reappraisal	Situation selection
Item				
I tried to make sense of my feelings	0.99			
I focused on what I was currently feeling and doing	0.47	−0.16	−0.16	0.14
I tried to outwardly express the emotion I wanted to feel		1.00		
I tried to let my feelings out by venting	0.17	0.22		0.18
I tried to think differently about the way I was feeling		0.12	0.59	
I tried to think differently about the activity I was doing		−0.12	0.58	
I suppressed the outward expression of my current feelings	−0.13		0.36	
I tried to adopt a more detached, objective perspective on the situation		−0.12	0.24	
I thought about something unrelated to what I was doing			0.16	
I changed something about the activity I was already doing			0.16	0.68
I engaged in a specific activity			−0.18	0.58
Factor correlations				
Concentration	—			
Strategic expression	.13	—		
Reappraisal	.08	.06	—	
Situation selection	.14	.05	.25	—

Note. $N = 206$. Factor correlations above $|.13|$ are significant at $p < .05$. Loadings $> |.40|$ are bolded. Loadings $< |.10|$ are left blank. Loading patterns were used to compute factor scores for each of the four emergent strategies.

rarely reported using emotions as tools for epistemic, eudaimonic, or hedonic purposes (see Tamir, 2016).

We also found that participants deployed four relatively independent strategies when using emotions as tools, two of which were cognitive (i.e., concentration, reappraisal) and two of which were behavioral (i.e., situation selection, outward expression). Of particular interest is the emergence of outward expression as a strategy. Despite having long been recognized in sociological accounts of emotion regulation (Hochschild, 1983) and being theoretically included as a form of response modulation in major models of emotion regulation (Gross, 1998, 2015), outward expression is almost never examined in empirical studies of emotion regulation (although suppression, the conceptual opposite of expression, is examined regularly; Webb et al., 2012). In Study 1, suppression did not load strongly on any of the four factors representing strategies deployed when people use emotions as tools. This finding may underscore a difference between using emotions as tools—which likely often involves increasing one's experience or expression of a certain emotion—and people's attempts to decrease negative emotions, which often involves suppression (e.g., Gross et al., 2006; Kalokerinos, Résibois, et al., 2017; Webb et al., 2012). We will empirically address this question in Study 5.

Study 2

For a person to use an emotion to accomplish a certain context-specific task, this person must have a belief that the emotion in question would be useful in accomplishing the task. Study 2 therefore examined a likely prerequisite to people using emotions as tools: Consciously believing that a context exists in which a specific emotion would be useful to experience. We tested whether people more readily intuit the contexts in which positive (vs. negative) emotions are likely to be useful. Participants read scenarios in which prior literature suggests that one emotion is likely to function as a tool and were asked to select the optimal emotion to use as a tool in that scenario from a list of five positive and five

negative emotions. We examined whether people typically believed that certain emotions would be useful in the situations in which we would expect them to be useful based on prior work, and whether these beliefs differed across positive and negative emotions. We used a scenario-matching paradigm to connect our work to research on emotional intelligence, which is viewed as encompassing people's ability to match emotions to appropriate situations, among other attributes (Elfenbein & MacCann, 2017; Mayer, Salovey, Caruso, & Sitarenios, 2003).

Method

Participants. Three hundred fifty-four individuals completed the study, including 234 MTurk workers and 120 University of Michigan students. We excluded 29 participants (8% of the original sample; $n = 11$ MTurk workers; $n = 18$ students) on a priori grounds for failing one of two attention checks. First, participants were asked to respond with *disagree a little* to an item on a Likert scale; participants who did not select this response were excluded. Second, participants were asked whether their data were reliable; participants who did not affirm this statement were excluded. These exclusions left 325 participants ($n = 223$ MTurk workers, 56% women, $M_{\text{age}} = 36.16$, $SD = 11.51$; $n = 102$ students, 69% women, $M_{\text{age}} = 18.68$, $SD = 1.24$).

Our target analysis in Study 2 involved comparing independent proportions. We decided a priori that we were interested in detecting a 10% or greater difference between proportions, which would require these proportions to be based on at least 100 observations (i.e., with 100 observations, the standard error of a proportion will always be .05 or less). This required us to recruit a sample of more than 200 participants, given that Study 1 involved four conditions and two responses per participant (i.e., a sample of more than 200 would yield $n > 50$ participants and > 100 responses per condition). We achieved this goal with our subsample of MTurk workers. We then collected an additional 102 participants in the positive emotion condition of Study 2, using an unexpected allotment of credits from our university's subject pool. We reasoned that doing

so would only increase the generalizability of our findings. We did not have any allotment of credits to collect a student sample for the negative emotion condition. Of note, we observed no differences between our MTurk and student samples in the pattern of results reported below for the positive emotion condition.

Overview of design. Participants were asked to imagine themselves in 10 scenarios in which a specific emotion would be expected to serve as a tool, in that prior literature suggests that this emotion typically functions to bring about a desired outcome in the corresponding context. Using a 2×2 between-subjects design, scenarios varied in (a) valence (i.e., whether they called for using a positive or negative emotion as a tool) and (b) controllability (i.e., whether the participant could or could not control whether they attained the desired outcome). We manipulated controllability to test whether participants had knowledge of contexts in which no emotion would be useful to feel, because the goal they wished to attain was outside of their control. Using this design, a participant might be assigned to imagine 10 controllable scenarios calling for the use of positive emotions as tools. For each scenario, participants reported which (if any) of 10 emotions would be useful in that context, using the following prompt:

Which of the following emotional experiences would be most useful to experience right then, while this situation is unfolding (i.e., which would produce the best outcome)? You have the option of indicating that none of these emotions would be useful to experience (i.e., none would bring about a beneficial outcome).

Scenarios. We selected 10 emotions, including five positive emotions (i.e., authentic pride, compassion, gratitude, hubristic pride, and love) and five negative emotions (i.e., anger, anxiety, envy, guilt, and shame). For each emotion we wrote four scenarios,

yielding 40 scenarios altogether (see the [online supplemental materials](#) for full text of each scenario). Two scenarios for each emotion were *controllable*, in that they described a situation in which prior literature suggests that experiencing the target emotion is likely to help to bring about a desired outcome (see [Table 2](#)). For example, controllable scenarios for anger (i.e., confronting argumentative coworkers; confronting someone who makes a lowball financial offer) called for strong negotiation tactics and coercive behavior (e.g., [Fischer & Roseman, 2007](#); [Van Kleef et al., 2004](#)).

We also wrote two *uncontrollable* scenarios for each emotion, which were identical in content to the controllable scenarios except that the participant could not do anything to affect a desired outcome in the situation, regardless of which emotion they chose to use as a tool. For example, in the controllable version of one anger scenario, feeling anger could be helpful in prompting the participant to confront his or her argumentative coworkers during a meeting. In contrast, in the uncontrollable version of this same scenario, no emotion would be helpful to feel because the participant does not have the ability to assert his or her opinion in the conversation (i.e., the meeting is being held over Skype and the participant's computer microphone is not working).

Emotion selection. After reading each scenario, participants were asked to indicate which of the 10 emotions listed above would be most useful to experience during the scenario to bring about the best outcome. The 10 emotion response options were written based on recent work on the subjective experience of each emotion (e.g., [Fischer & Roseman, 2007](#); [Harmon-Jones et al., 2016](#); [Lange et al., 2018](#); [Tangney & Dearing, 2002](#); [Tracy & Robins, 2007](#); [Weidman & Tracy, 2020](#)). For example, the description of anger read "you make yourself feel in a rage, and you resent what someone or some group of people did to you" (see the

Table 2
Overview of Typical Emotional Functions in Controllable Scenarios (Study 2)

Emotion	Description of scenarios	Typical emotion function	Example references
Authentic pride	Completing a work report; trying out for a soccer team	Hard work and effortful persistence	Weidman, Tracy, & Elliot, 2016 Williams & DeSteno, 2008
Anger	Confronting argumentative coworkers or someone who makes a lowball financial offer	Negotiation tactics and coercive behavior	Fischer & Roseman, 2007 Van Kleef et al., 2004
Anxiety	Avoiding making an error during a musical performance or work presentation	Vigilant and careful behavior in a performance context	Roskes, Elliot, Nijstad, & DeDreu, 2013 Tamir & Ford, 2009
Compassion	Consoling a friend; caring for an injured child	Care and concern for a vulnerable individual	Goetz, Keltner, & Simon-Thomas, 2010 Stellar & Keltner, 2014
Envy	A coworker gets a prestigious award; a close friend gets the lead role in a play	Emulating another person or undermining their success	Lange & Crusius, 2015 van de Ven, Zeelenberg, & Pieters, 2009
Gratitude	Receiving an unexpected birthday present; receiving help to pick up spilled groceries	Acknowledging a close other who had benefitted the self	Algoe, 2012 Algoe, Fredrickson, & Gable, 2013
Guilt	Forgetting lunch plans with a friend; allowing a friend's dog to escape the leash	Making amends for a personal wrongdoing	Amodio, Devine, & Harmon-Jones, 2007 Tangney & Dearing, 2002
Hubristic pride	Engaging in a public debate; playing in a heated, competitive basketball game	Intimidating and dominant behaviors	Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2013 Cheng, Tracy, & Henrich, 2010
Love	Going on a romantic date; walking with one's partner late at night	Signaling commitment, intimacy, and connection	Gonzaga, Turner, Keltner, Campos, & Altemus, 2006, 2008
Shame	Receiving a negative performance review from a boss; being lectured by a cop for speeding	Signaling appeasement and submissiveness	Fessler, 2007 Shariff & Tracy, 2009

online supplemental materials for full text). Participants could also indicate that none of the presented emotions would be useful to experience.

To ensure that each emotion response option corresponded to the target emotion, we conducted a Pilot Study ($N = 103$ MTurk workers; 46% women; $M_{\text{age}} = 33.24$, $SD = 9.32$). Participants were presented with the 10 emotion descriptions referenced above in randomized order, alongside 10 labels corresponding to the same emotions (e.g., *love*, *anger*). Participants were asked to match each of the 10 descriptions to an emotion label but were told that each description could match only one label, and vice versa. Results confirmed that our emotion descriptions reflected each target emotion: Mean accuracy was 84% across emotions and fell below 80% only for shame and guilt (accuracy = 75% and 73%, respectively; see Table S4 in the online supplemental materials for full results). This latter result was attributable to the fact that 13% of participants matched the guilt description to *shame*, and 14% of participants matched the shame description to *guilt*, which is not surprising given the conceptual similarities between shame and guilt (e.g., Cohen, Wolf, Panter, & Insko, 2011; Paulhus, Robins, Trzesniewski, & Tracy, 2004; Tignor & Colvin, 2017).

Results

Analyses. For each scenario, we identified a *target* response that would indicate that participants believed that the corresponding emotion would function as a tool in each context. For *controllable* scenarios, the target response would be the emotion which would likely be useful to experience in the given scenario (e.g., anger for the anger scenario). We tested whether participants selected the target emotion more frequently than other emotions as well as more frequently than chance (10%, given that we provided 10 emotion response options).

In contrast, for *uncontrollable* scenarios, the target response would be *none of these emotions*, given that no emotion could help the participant achieve a desired outcome. We tested whether, compared with controllable scenarios, participants chose *none of these emotions* more frequently and chose the corresponding emotion less frequently. For example, when responding to uncontrollable anger scenarios, do participants choose *none of these emotions* more frequently and *anger* less frequently than when responding to controllable scenarios? Below we present results aggregated across positive and negative emotions, and Tables S5 and S6 in the online supplemental materials present results for individual emotions.

Controllable scenarios. Participants showed strong beliefs about when to use positive emotions as tools, selecting the target emotion 55% of the time on average across positive emotion scenarios. Given that there were 10 emotion response options, this rate greatly and significantly exceeded the 10% accuracy that we would have expected from chance alone (binomial test: $p < .001$; see Figure 2, Panel 1). Furthermore, the rate at which participants selected the target emotion significantly exceeded the average rate at which participants selected *any nontarget positive or negative emotion combined* (35%; $z = 9.26$, $p < .001$). This underscores participants' strong intuition about when to use positive emotions as tools.

In contrast, participants showed weak intuition of when to use negative emotions as tools, selecting the target emotion only 13% of the time across negative emotion scenarios, a rate that did not exceed chance (binomial test: $p = .28$; see Figure 2, Panel 2). When participants did not select the target negative emotion, they selected one of the five positive emotions at a rate far exceeding chance (48%; binomial test: $p < .001$). Participants also selected *none of these emotions* more frequently for controllable negative

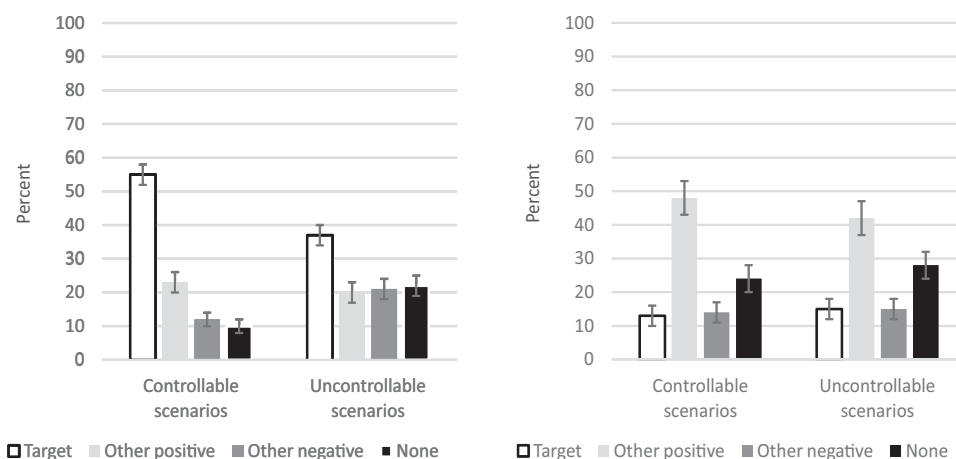


Figure 2. Participants' beliefs about when to use emotions as tools (Study 2). Panel 1: Scenarios calling for positive emotions. Panel 2: Scenarios calling for negative emotions. Positive emotions: $Ns = 212$ and 214 for controllable and uncontrollable scenarios, respectively. Negative emotions: $Ns = 116$ and 108 for controllable and uncontrollable scenarios, respectively. Target: Participants selected the emotion called for in the corresponding situation (e.g., participants selected authentic pride in a scenario in which prior work suggests that authentic pride is likely to be useful). Other positive: Participants selected another, nontarget positive emotion. Other negative: Participants selected another, nontarget negative emotion. None: Participants selected "none of these emotions would be useful to experience."

emotion scenarios (24%) compared with controllable positive emotion scenarios (10%; $z = 3.46$, $p < .001$). These results indicate that, in scenarios in which negative emotions function as tools, participants instead believed that positive emotions function as tools or believed that no emotions function as tools.

Uncontrollable scenarios. Participants showed strong beliefs about when positive emotions do not function as tools. When responding to uncontrollable positive emotion scenarios, participants chose the target emotion less frequently (37% vs. 55%; $z = 8.33$, $p < .001$), and chose *none of these emotions* more frequently (22% vs. 10%; $z = 7.53$, $p < .001$; see Figure 2, Panel 1), compared with controllable positive emotion scenarios.

In contrast, participants showed poor intuition of when negative emotions do not function as tools. Across controllable versus uncontrollable scenarios, participants chose the target negative emotion (13% vs. 15%; $z = 1.00$, $p = .32$) and *none of these emotions* (24% vs. 28%; $z = 1.52$, $p = .13$) at similar rates (see Figure 2, Panel 2). As was the case for controllable scenarios, participants frequently indicated that one of the five positive emotions functioned as a tool in these uncontrollable scenarios (42%; binomial test against chance: $p < .001$).

Discussion

In Study 2, we uncovered a first clue suggesting that participants use positive emotions as tools more frequently than negative emotions: Participants had strong beliefs that positive emotions should be used as tools in contexts in which these specific emotions are likely to be useful, but showed no such intuition regarding negative emotions. Participants also showed a strong sensitivity to contexts in which positive emotions would *not* function as tools—because a desired outcome was largely outside of their control—but again showed no such sensitivity for negative emotions. Of note, however, we relied on experimenter intuition in constructing scenarios that were controllable vs. uncontrollable. We did not empirically assess perceptions of situational control directly because doing so would have introduced demand effects that would have influenced responses on our dependent measure. Differences between controllable and noncontrollable scenarios should therefore be interpreted with caution.

Surprisingly, participants' sense that positive emotions function as tools extended to contexts in which negative emotions would have likely brought about beneficial outcomes. For example, in confrontational scenarios in which prior work suggests that anger tends bring about desired outcomes (e.g., Andrade & Ho, 2009; van Kleef et al., 2004), participants frequently indicated that positive emotions such as authentic pride, gratitude, and compassion would be useful to feel (see Table S6 in the online supplemental materials). This latter finding could be driven in part by people's belief that, in an unpleasant situation, feeling a positive emotion would be useful insofar as it might help people feel better, even if it does not directly contribute a more utilitarian goal such as accomplishing a task or enhancing a relationship.

Participants' beliefs about when to use positive emotions as tools was not driven by a blanket preference for experiencing *any* pleasant emotion (i.e., hedonic motivation; Larsen, 2000; Riediger et al., 2009; Tamir, 2016). This is evidenced by the fact that participants chose to feel specific positive emotions (e.g., gratitude and love) in contexts in which those emotions have been shown to

typically function as tools. For example, participants indicated that gratitude is useful to feel in situations calling for appreciation and thanks toward a close other (e.g., Algoe, 2012), whereas love is useful to feel in situations calling for commitment, intimacy, and connection with a romantic partner (e.g., Gonzaga, Turner, Keltner, Campos, & Altemus, 2006; see Table 2). If participants had selected emotions to use as tools based solely on pleasantness, then emotions such as gratitude and love would have been selected with equivalent frequency across these two contexts, given that they are similarly pleasant (Weidman & Tracy, 2020).

More broadly, in Study 2 we studied people's conscious beliefs that certain emotions would in fact be useful to feel in certain contexts. Yet it is also possible that people may intuit unconsciously when particular emotional responses are useful. Although these data therefore provide strong support that people have useful beliefs regarding appropriate times to use positive emotions as tools, they may nevertheless underestimate the overall degree to which people believe in the potential functional benefits of using emotions as tools.

Study 3

Study 2 suggested that people have much stronger beliefs about the contexts in which using positive (vs. negative) emotions as tools is likely to be beneficial. But do people in fact use positive emotions as tools more frequently than negative emotions in daily life? To answer this question, in Study 3 we used experience sampling to assess the frequency with which participants used emotions as tools compared with the frequency with which participants' emotions arose in a more reactive manner. In light of the findings from Study 2, we expected that participants would use positive emotions as tools more frequently than negative emotions.

A second goal of Study 3 was to examine how frequently participants used emotions as tools in contexts in which those emotions would be expected to be useful based on prior research. To accomplish this goal, we assessed the situations that participants found themselves in when they used emotions as tools. This allowed us to examine whether the specific emotion participants reported using as a tool (e.g., authentic pride) would be expected based on prior literature to be useful in the situation participants reported encountering (e.g., one requiring hard work and persistence; Williams & DeSteno, 2008). If this were the case, it would indicate *context-sensitive* use of emotions as tools. This definition echoes recent calls in the literature to account for context when studying emotion regulation (e.g., Aldao, 2013; Bonanno & Burton, 2013; Greenaway, Kalokerinos, & Williams, 2018).

Method

Participants. Participants were 125 students from the University of Michigan, of whom seven were excluded for failing one of the attention checks used in Study 2 and three were excluded for failing to provide a phone number that we could use for the experience-sampling portion of the study. This left 115 participants (74% women; $M_{\text{age}} = 18.66$, $SD = 0.89$). We arrived at this sample size by running as many participants as possible given our

university's subject pool credit allotment during the remainder of a single academic year after we had obtained IRB approval.

Procedure.

Baseline assessment. Participants completed a baseline assessment in the lab in which they reported demographics, provided us with a phone number, and were instructed regarding what to expect for the experience-sampling portion of the study. During this session, participants were told that we were interested in two possible ways to feel emotion, either (a) intentionally trying to feel an emotion because one thinks it will serve a useful purpose or (b) incidentally feeling an emotion because it just happens. Participants were told that each of these are completely natural ways to feel emotion and were given several examples of each type of emotional experience (e.g., intentional: trying to feel pride because it would motivate one to work hard; incidental: feeling pride because one just got a good grade on an exam). Participants were told that they would be reporting on their emotions in daily life and, for each emotion, whether it arose through the more intentional or incidental process. Participants were then shown the exact question they would receive during the experience-sampling portion of the study to assess whether their emotions arose through intentional or incidental processes.

Experience-sampling. During the two weeks following the baseline assessment, participants were sent five texts each day between 10:00 a.m. and 10:00 p.m. containing a survey that included four questions (following Kross et al., 2013). Question 1 asked participants to report the emotion that best described how they were feeling at the moment. Participants could select from the same eight emotion options used in Study 1 or could indicate that none of these emotions described how they were feeling.

Question 2 asked participants to report the intensity with which they were feeling the emotion they had indicated in Question 1 (the selected emotion choice from Question 1 was piped into the text of Question 2; 0 = *not at all*; 10 = *very much*). To ensure that participants did not learn that indicating a particular response would allow them to complete a shorter survey, those who had indicated in Question 1 that none of the emotions characterized how they were feeling reported the intensity with which they were feeling *happy* and *content* (i.e., pleasant mood; Feldman Barrett & Russell, 1998), using the same scale. This measure was not relevant to our research question and we do not discuss it further.

Question 3 probed whether the emotion indicated in Questions 1 and 2 was used as a tool or experienced reactively. Specifically, participants were asked to choose between one of two potential causes for the emotion: (a) "I intentionally tried to feel this way" or (b) "It just happened" (the selected emotion choice from Question 2 was piped into the text of Question 3). Intensity (reported in Question 2) did not significantly differ between episodes during which participants used emotions as tools ($M = 6.51$, $SD = 1.75$) and during which participants felt emotions reactively ($M = 6.63$, 2.02 ; $t[3,964] = 1.45$, $p = .15$, $d = .06$ [$-.02$, $.14$]; see Table S7 in the online supplemental materials).

Question 4 asked participants to report on the situation they were currently experiencing. Participants were presented with eight brief situation descriptions written using the same logic as we used for the controllable situations in Study 2: Each situation described a context in which one of the eight emotions from Question 1 would be expected to be useful based on prior literature, and therefore could function as a tool (see the online supple-

mental materials for a full list of situation descriptions). Participants could select multiple situation descriptions if applicable or could indicate that none of the situation descriptions applied to them.

We counted a *context-sensitive* attempt to use emotions as tools if the following two conditions were met: (a) in Question 2, a participant reported intentionally trying to feel one of the eight emotions in Question 1 and (b) in Question 1, this participant reported that she was experiencing the emotion that we would expect to be useful in the situation she reported encountering in Question 3. We reasoned that real-life situations could involve more than one of the characteristics we described; if participants reported encountering multiple situational characteristics in Question 3, we therefore examined whether either of these corresponded to the emotion reported in Question 1. For example, if a participant reported encountering a situation that called for both anger and envy and reported intentionally feeling anger in that situation, we counted it as a context-sensitive attempt to use emotions as tools.

Given that participants could choose from one of eight emotions in any situation, only one of which would be appropriate to use as a tool in each specific situation, the rate of context-sensitive regulation we would expect to observe by chance alone was 12.5%.

Results

Preliminary analyses. Participants completed a total of 6,824 surveys for an average response rate of 84% ($M = 59.34$ surveys per participant; $SD = 14.44$). In 3,966 of these surveys (58%), participants indicated that they were experiencing one of the eight emotion options provided in Question 1; these responses were used to answer our primary research questions. Positive and negative emotions were selected with approximately equal frequency (52% and 48%, respectively; see Table S8 in the online supplemental materials). However, situations in which positive emotions function as tools were encountered with much greater frequency than situations in which negative emotions function as tools (71% and 29%, respectively; see Table S9 in the online supplemental materials).

How frequently do people use emotions as tools? Participants used emotions as tools in nearly one of every five emotion episodes they experienced across the two weeks of the study (17%; see Figure 3). Participants also reported using each specific emotion as a tool in at least 1 out of every 10 episodes of that emotion (i.e., the proportion of episodes of each individual emotion during which that emotion was used as a tool was at least 10%; see Table S10 in the online supplemental materials).

In line with the findings of Study 2, however, we observed an asymmetry across valence: Participants used positive emotions as tools (23%) almost twice as frequently as negative emotions (12%; $z = 9.01$, $p < .001$; see Figure 3; see Table S10 in the online supplemental materials for rates for individual emotions).

How frequently is emotional tool use context-sensitive? Participants regularly used emotions as tools in a context-sensitive manner: The average rate across all emotions was 41%, which significantly exceeded chance (binomial test: $p < .001$; see Figure 4).

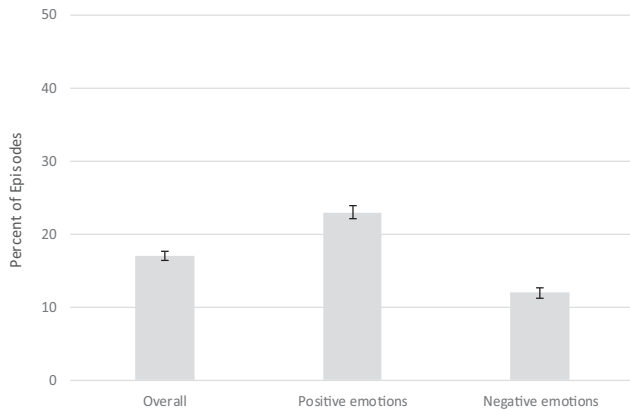


Figure 3. Frequency of emotional tool use in daily life (Study 3). Error bars represent $\pm 1 SE$.

Importantly, we again found an asymmetry across valence: Participants used positive emotions as tools in a context-sensitive manner more than twice as frequently (47%) as negative emotions (19%; $z = 5.40$, $p < .001$; see Figure 4). Despite this asymmetry, it is worth noting that average rates with which participants used emotions as tools in appropriate contexts exceeded chance for both positive and negative emotions (binomial tests: $ps < .001$ and $.04$, respectively; see Table S11 in the online supplemental materials for rates for individual emotions).

Discussion

Study 3 showed that people use emotions as tools almost twice as frequently for positive than negative emotions. Furthermore, we found that people used emotions as tools in situations in which we would expect those emotions to bring about beneficial outcomes more than twice as frequently for positive than negative emotions. These findings build on the finding in Study 2 that people had much stronger beliefs about the contexts in which positive emotions would be appropriate to use as tools, compared with negative emotions.

At the same time, Study 3 showed that people *do* in fact use both positive and negative emotions as tools with some regularity in daily life—in nearly one of every five emotional episodes on average—complimenting prior work showing that people *can* use emotions as tools in laboratory contexts (Tamir, 2009b, 2016). Furthermore, people regularly use emotions as tools in a context-sensitive manner more often than we would observe if participants had no intuitive understanding of which situations called for using emotions as tools. These results do imply that most emotions people experience arise reactively rather than because of intentional emotional tool use. Still, Study 3 shows that emotional tool use—in particular positive emotional tool use—is a common process that influences a nontrivial proportion of people's emotional experiences, and often is enacted in ways that we would expect to be beneficial based on prior literature.

Study 4a

Studies 2 and 3 showed that people have stronger beliefs about the contexts in which it is appropriate to use positive (vs. negative)

emotions as tools and in fact that people do use positive emotions as tools more frequently than negative emotions in daily life. A distinct but critical question is whether or not using emotions as tools (vs. feeling emotions reactively) leads to beneficial outcomes. Studies 4a and 4b began to address this question.

As noted earlier, we anticipated that this process might play out differently for positive versus negative emotions, in part because using emotions as tools is likely to lead to unpleasant feelings of inauthenticity (Jongman-Serenio & Leary, 2016; Lenton et al., 2013; Schmader & Sedikides, 2018). On one hand, we anticipated that using *positive emotions* as tools (vs. feeling positive emotions reactively) may lead to less beneficial outcomes, because feeling inauthentic may be associated with a souring of the valued and sought-after feelings and outcomes that positive emotions typically engender. On the other hand, we anticipated that using *negative emotions* as tools would lead to more beneficial outcomes than people typically derive from feeling these emotions reactively: Unpleasant feelings of inauthenticity may signal to an individual that a negative emotional experience is not that bad and, in turn, not as dire of a predicament as is often assumed for negative emotions. If inauthenticity is not strongly tied to beneficial outcomes for negative emotions, then using negative emotions as tools in appropriate contexts is likely to remain beneficial.

To address these issues, in Study 4a participants were randomly assigned to recall a prior emotional episode in which they used an emotion as a tool or experienced an emotion reactively, as well as being randomly assigned to recall a positive or negative emotion episode. We then compared the beneficial outcomes participants experienced in the situation across episodes that involved using emotions as tools and experiencing emotions reactively.

Method

Participants. Two hundred fifty-one participants completed the study, including 225 MTurk workers and 26 University of Michigan students. As in Study 2, we excluded 19 participants (8% of the original sample; $n = 19$ MTurk workers; $n = 0$ students) for not following instructions of our writing prompt, leaving a total of 232 participants for Study 4a ($n = 206$ MTurk workers, 58% women, $M_{\text{age}} = 35.74$, $SD = 11.54$; $n = 26$ students, 58% women, $M_{\text{age}} = 19.46$, $SD = 2.37$). We aimed to recruit the same sample

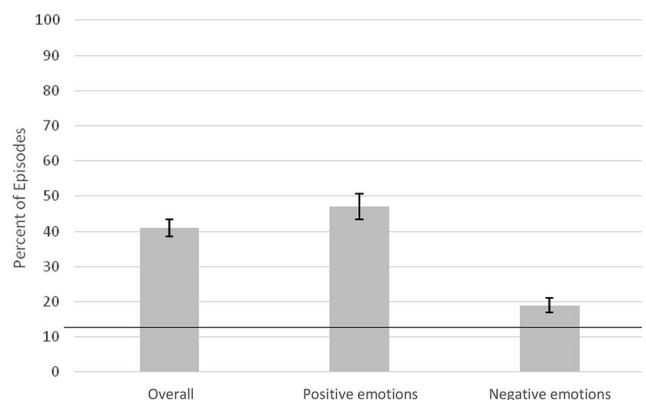


Figure 4. Context-sensitivity in emotional tool use in daily life (Study 3). Error bars are $\pm 1 SE$. Horizontal line indicates chance (12.5%).

size as in Study 1, which would yield more than 100 participants per experimental condition. However, during the time we were writing this article, we had an opportunity to collect a small additional subsample of student participants during our university's summer session ($n = 26$). We reasoned that these extra data could only increase the reliability and generalizability of any findings we observed. All results reported below hold when examining only the MTurk sample.

Procedure. Participants were randomly assigned to one of four conditions in a 2 (emotion type: emotions-as-tools or reactive emotions) \times 2 (emotion valence: positive or negative) between-subjects design. As in Study 2, participants assigned to the emotions-as-tools conditions were asked to recall an episode during which they intentionally tried to feel an emotion because it would be useful. Participants assigned to the reactive emotion conditions were asked to recall a prior episode during which they felt a certain emotion because this emotion just happened to them in a certain situation. As in Study 2, participants were then asked to select one of four positive or negative emotions (depending on condition) after which they were asked to describe why they intentionally tried to feel this emotion (emotions-as-tools condition) or why they began to feel this emotion (reactive emotion condition).

Participants then completed two questions in random order which served as our primary dependent measures: (a) "How satisfied were you with how the situation played out?" and (b) "To what extent did things go well for you in this situation?" (1 = *not at all*; 5 = *very much*). We wrote these two items with the goal of capturing a person's sense that things worked out well in a given situation, across a broad range of definitions for what "worked out well" might mean. We adopted this goal because the many emotions assessed in this study could be expected to bring about a wide range of beneficial outcomes that might not all be captured by a more specific item (e.g., an academic achievement, a positive social interaction). We also were not aware of any existing self-report scales that captured our target construct, which is why we chose to use these two ad hoc items. Scores on these two items were highly correlated ($r = .85$), so we averaged them to form a composite index of the extent to which participants experienced a beneficial outcome during the emotion episode they narrated. Using the same scale, participants also reported how intensely they felt the recalled emotion and the extent to which they felt in control of the emotion.

Results

Does using emotions as tools lead to beneficial outcomes?

A two-way interaction emerged between type of emotion and emotion valence, $F(1, 226) = 24.98$, $p < .001$ (see Figure 5). For negative emotions, participants derived *more* beneficial outcomes from using emotions as tools ($M = 3.52$, $SD = 1.11$) than feeling emotions reactively ($M = 2.83$, $SD = 1.25$; $t[94] = 2.89$, $p < .01$; $d = .58$ [.17, .99]). In stark contrast, for positive emotions, participants derived *less* beneficial outcomes from using emotions as tools ($M = 3.72$, $SD = 1.06$) than feeling emotions reactively ($M = 4.40$, $SD = .69$; $t[117] = 4.45$, $p < .001$; $d = -.76$ [-1.11, -.46]). These findings suggest that, compared with feeling emotions reactively, using negative emotions as tools enhances

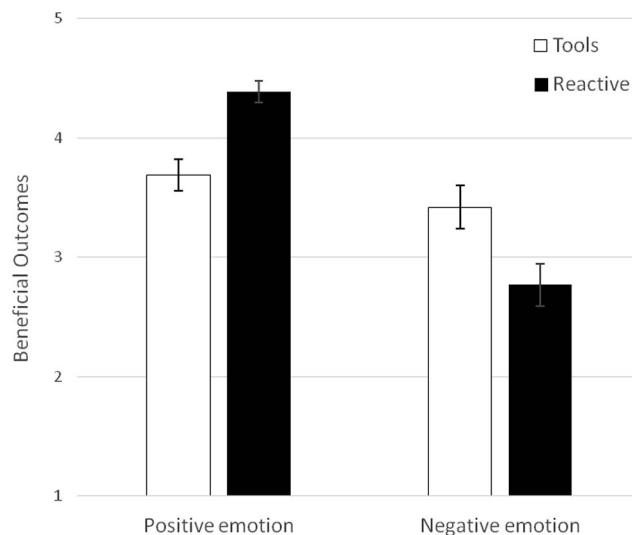


Figure 5. Beneficial outcomes experienced following emotions as tools versus reactive emotions (Study 4a). Error bars are ± 1 SE.

beneficial outcomes whereas using positive emotions as tools leads to less beneficial outcomes.

Critically, the beneficial outcomes that participants derived from using negative emotions as tools did not significantly differ from the beneficial outcomes participants derived from using positive emotions as tools, $t(88) = .93$, $p = .36$, $d = .19$ [- .19, .56]. This means that, although positive emotions were more beneficial to experience on average than negative emotions, when people use emotions as tools, this difference was largely eliminated.

Ancillary analyses. Reports of emotional intensity and feelings of control provided insight into the effect of using emotions as tools on subsequent beneficial outcomes.

Emotion intensity was lower when people used positive emotions as tools ($M = 3.65$, $SD = 1.23$) than when they felt positive emotions reactively ($M = 4.40$, $SD = .75$, $t[113] = 4.27$, $p < .001$, $d = -.73$ [-1.08, -.38]), but this difference was smaller and nonsignificant for negative emotions ($M_{\text{Reactive}} = 3.96$, $SD = .91$; $M_{\text{Tools}} = 3.64$, $SD = .89$; $t[93] = 1.79$, $p = .08$, $d = -.30$ [- .70, .10]). This finding suggests that people who intended to use positive emotions as tools may not always have succeeded in making themselves feel those positive emotions, which could have precluded the beneficial outcomes people typically would have experienced from positive emotions.

Conversely, feelings of control were higher when emotions were used as tools than when emotions were experienced reactively for negative emotions ($M_{\text{Tools}} = 3.41$, $SD = 1.21$; $M_{\text{Reactive}} = 2.46$, $SD = 1.11$; $t[89] = 4.00$, $p < .001$, $d = .82$ [.41, 1.24]) and, to a lesser extent, for positive emotions ($M_{\text{Tools}} = 4.17$, $SD = .94$; $M_{\text{Reactive}} = 3.78$, $SD = 1.11$; $t[131] = 2.18$, $p = .03$, $d = .38$ [.04, .72]). This suggests that, particularly for negative emotions, the feelings of control that accompanied using emotions as tools may have allowed participants to experience more beneficial outcomes during these episodes.

Importantly, although reports of emotional intensity and feelings of emotional control varied systematically across conditions, the primary two-way interaction reported above regarding

beneficial outcomes held when controlling for these two variables.

Study 4b

In Study 4b, we aimed to directly replicate the asymmetry from Study 4a that using negative emotions as tools (vs. feeling negative emotions reactively) led to more beneficial outcomes, whereas using positive emotions as tools led to less beneficial outcomes than reactive positive emotions. We also included a neutral control condition in Study 4b to help determine whether the asymmetry noted above was primarily attributable to the effect of using emotions as tools or the effect of feeling emotions reactively.

Study 4b also aimed to test whether authenticity is associated with changes in the beneficial outcomes that arise from using positive and negative emotions as tools. As noted above, we anticipated that feelings of inauthenticity would not co-occur with beneficial outcomes when people used positive emotions as tools—because positive emotions are typically desirable and beneficial—whereas inauthenticity would have no link with beneficial outcomes for negative emotions.

Method

Participants. Three hundred thirty MTurk workers completed the study. Using the same a priori criteria as Study 4a, we excluded 19 participants (6% of the original sample), leaving a total of 311 participants for Study 4b (60% women, $M_{\text{age}} = 33.86$, $SD = 11.15$). We adopted the same sample size goal as Study 4a of recruiting more than 100 participants per condition. This resulted in a sample size of approximately 100 more participants than Study 4a, given that Study 4a had two experimental conditions whereas Study 4b had three conditions.

Procedure. Participants were randomly assigned to one of five conditions. Four of these conditions were identical to the 2 (emotion type: emotions as tools or reactive emotions) \times 2 (emotion valence: positive or negative) between-subjects design used in Study 4a. All other participants were randomly assigned to a neutral control condition. Following a similar protocol as the other four conditions, participants in the neutral control condition were asked to recall emotionally neutral experience and describe why this experience was emotionally neutral.

Participants then completed three outcome measures in randomized order. Two of these items were the same primary dependent measures capturing beneficial outcomes that we used in Study 4a (i.e., “How satisfied were you with how the situation played out?”; “To what extent did things go well for you in the situation?”). These two items were again highly correlated ($r = .82$), so we again averaged them to form a composite. The third item captured feelings of authenticity in the situation participants had narrated (i.e., “To what extent did you feel like you were being your real, genuine self during the situation?”; 1 = *not at all*; 5 = *very much*; item wording based on Lenton et al., 2013). Finally, as in Study 4a, participants in each of the four emotional conditions reported how intensely they felt the recalled emotion and the extent to which they felt in control of the emotion. Participants in the neutral control condition completed analogous items prompting them to reflect on their feelings during the neutral episode.

Results

Does using emotions as tools promote beneficial outcomes?

Directly replicating Study 4a, we observed a two-way interaction between type of emotion and valence ($F(1, 201) = 15.90$, $p < .001$; see Figure 6). For negative emotions, participants derived *more* beneficial outcomes from using emotions as tools ($M = 3.46$, $SD = 1.09$) than feeling emotions reactively ($M = 2.78$, $SD = 1.28$; $t[99] = 2.88$, $p < .01$; $d = .57$ [.17, .97]). In contrast, for positive emotions, participants derived *less* beneficial outcomes from using emotions as tools ($M = 4.02$, $SD = 0.99$) than from feeling emotions reactively ($M = 4.49$, $SD = .64$; $t[90] = 2.89$, $p < .01$; $d = -.56$ [-.95, -.17]).

To examine the nature of this asymmetry, we compared the outcomes people derived from each type of emotion with the outcomes reported in our neutral control group ($M = 3.74$, $SD = 1.22$). As shown in Figure 6, whereas people reported *far less* beneficial outcomes when experiencing negative emotions reactively compared with a neutral situation, $t(156) = 4.59$, $p < .001$, $d = -.77$, CI [-1.12, -.43], the difference between using negative emotions as tools and a neutral situation was not significant, $t(152) = 1.37$, $p = .17$, $d = .24$, CI [-.57, .10].

Conversely, whereas people reported *far more* beneficial outcomes when experiencing positive emotions reactively compared with a neutral situation, $t(153) = 4.08$, $p < .001$, $d = .70$, CI [.36, 1.05], the difference between using positive emotions as tools and a neutral situation was not significant, $t(156) = 1.45$, $p = .15$, $d = .24$, CI [-.08, .58].

These findings together indicate that using negative emotions as tools (compared with feeling them reactively) lessens the typical detrimental effect that people experience when feeling negative emotions reactively. In contrast, using positive emotions as tools leads to less beneficial outcomes than when people experience positive emotions reactively.

Authenticity. People felt more authentic when feeling emotions reactively ($M = 4.28$, $SD = .93$) than when using emotions

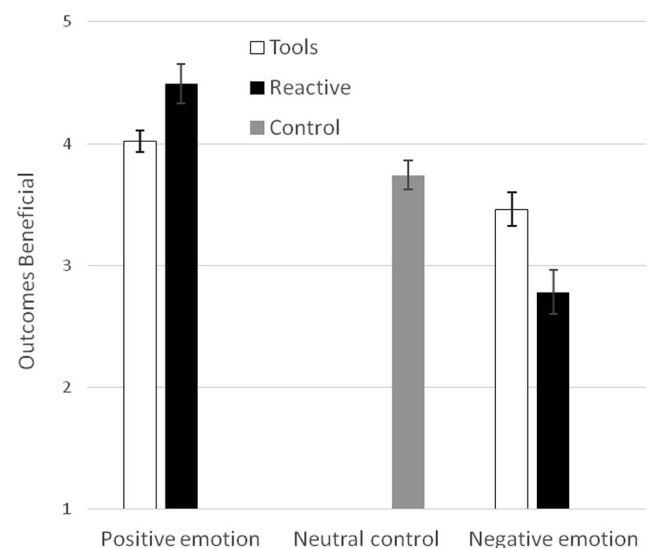


Figure 6. Beneficial outcomes experienced following emotions as tools versus reactive emotions (Study 4b). Error bars are ± 1 SE.

as tools ($M = 3.54$, $SD = 1.17$; $t[195] = 5.00$, $p < .001$, $d = .70$, $CI [.42, .98]$). People also felt more authentic when feeling positive emotions ($M = 4.14$, $SD = 0.99$) compared with negative emotions ($M = 3.69$, $SD = 1.20$; $t[197] = 2.92$, $p < .01$, $d = .41$, $CI [.13, .69]$). The interaction between emotion type and valence was not significant, $F(1, 202) = .06$, $p = .82$; using emotions as tools felt inauthentic regardless of whether these emotions were positive or negative.

Was authenticity associated with subsequent beneficial outcomes when using positive and negative emotions as tools? We observed a strong, positive correlation between beneficial outcomes and authenticity for positive emotions, $r = .55$, $p < .001$. In contrast, beneficial outcomes and authenticity were uncorrelated for negative emotions ($r = .04$, $p = .69$; difference between these two correlations: $z = 4.09$, $p < .001$).

We therefore used path analysis in lavaan (Rosseel, 2012) to estimate the indirect effect of using emotions as tools (vs. feeling emotions reactively) on beneficial outcomes through feelings of authenticity, separately for both positive and negative emotions.

For positive emotions, using emotions as tools had a negative, indirect effect on beneficial outcomes through reduced feelings of authenticity ($b = -.36$, $CI [-.57, -.16]$, $p < .001$; see Figure 7); when authenticity was included in this mediation model, the negative direct effect documented above of using positive emotions as tools on beneficial outcomes became small and nonsignificant ($b = -.10$, $CI [-.40, .18]$, $p = .49$).

In contrast, for negative emotions, this indirect effect was much smaller and nonsignificant ($b = -.11$, $CI [-.27, .05]$, $p = .19$); the positive direct effect documented above of using negative emotions as tools on beneficial outcomes remained large and significant in this model ($b = .79$, $CI [.32, 1.26]$, $p < .001$). Because the confidence interval for the indirect effect of positive emotions on beneficial outcomes does not include the parameter estimate for the indirect effect of negative emotions on beneficial outcomes (and vice versa), these two indirect effects are significantly different.

These findings suggest that using emotions as tools reduced the beneficial outcomes people derived from positive emotions in part because reduced feelings of authenticity were associated with less beneficial outcomes stemming from using positive emotions as

tools. In contrast, authenticity was not associated with the beneficial outcomes of negative emotional tool use.

Ancillary analyses. As in Study 4a, emotional intensity was lower for using positive emotions as tools ($M = 3.81$, $SD = 1.00$) than feeling positive emotions reactively ($M = 4.44$, $SD = .61$, $t[87] = 3.87$, $p < .001$, $d = -.76 [-1.16, -.36]$). This difference also emerged for negative emotions ($M_{\text{Reactive}} = 4.25$, $SD = .87$; $M_{\text{Tools}} = 3.64$, $SD = .92$; $t[100] = 3.42$, $p < .001$, $d = -.68 [-1.08, -.28]$) and was somewhat larger than in Study 4a.

Conversely, as in Study 4a, feelings of control were higher when negative emotions were used as tools ($M = 3.68$, $SD = 1.08$) than when negative emotions were experienced reactively ($M = 2.51$, $SD = 1.25$; $t[100] = 5.10$, $p < .001$, $d = 1.00 [.59, 1.41]$). Also as in Study 4a, this difference was much smaller for positive emotions and in fact did not reach significance ($M_{\text{Tools}} = 4.04$, $SD = .96$; $M_{\text{Reactive}} = 4.04$, $SD = 1.09$; $t(98) = .01$, $p = .99$, $d = .00 [-.39, .39]$).

Importantly, as in Study 4a, the primary two-way interaction reported above regarding beneficial outcomes held when controlling for emotional intensity and control.

Discussion

Studies 4a and 4b provided initial evidence that using emotions as tools has different implications for positive versus negative emotions. Using negative emotions as tools—compared with feeling negative emotions more reactively—*increased* the likelihood that people experienced beneficial outcomes from those emotions, whereas using positive emotions as tools *decreased* the likelihood that people in turn experienced beneficial outcomes in a given situation. Thus, although positive emotions led to more beneficial outcomes than negative emotions on average, this advantage was partially eliminated when people used emotions as tools. By including a neutral control condition in Study 4b, we were able to determine that using negative emotions as tools lessens the typical detrimental effect of reactive negative emotions, whereas using positive emotions as tools lessens the typical beneficial effects of reactive positive emotions. In Study 4b, we also found that authenticity was associated with this asymmetry: Using positive emotions as tools (vs. feeling them reactively) led to reduced

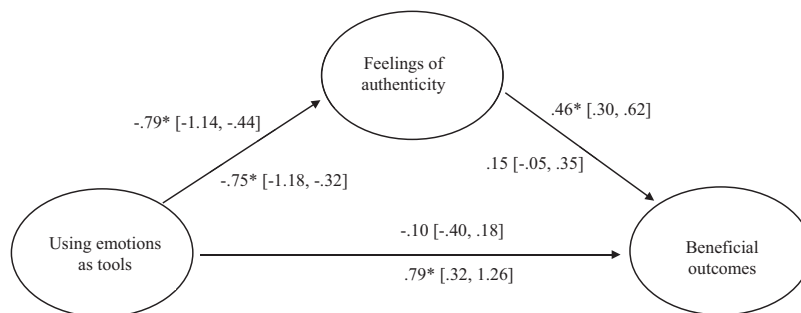


Figure 7. Indirect effect of using emotions as tools on beneficial outcomes through feelings of authenticity (Study 4b). * $p < .05$. Path weights are unstandardized regression coefficients. Using emotions as tools is a binary variable based on experimental condition assignment, coded as 0 = reactive emotion condition and 1 = using emotions as tools condition. Path weights above arrows are for positive emotions, and path weights below arrows are for negative emotions. Path coefficients, confidence intervals, and p values for indirect effects are presented in the main text.

feelings of authenticity, and these feelings in turn were negatively correlated with the beneficial outcomes that people experienced during positive emotion episodes. In contrast, although using negative emotions as tools also produced feelings of inauthenticity, these feelings of inauthenticity were not associated with the beneficial outcomes derived from using negative emotions as tools.

We note that our design does not allow us to infer causality regarding the link between authenticity and beneficial outcomes. However, there is strong a priori reason to believe that feelings of inauthenticity (our mediator) have pernicious causal downstream effects on various intra- and interpersonal processes (such as the beneficial outcomes used as our dependent measure in Study 4b; e.g., English & John, 2013; Fleeson & Wilt, 2010; Jongman-Sereno & Leary, 2016; Lenton et al., 2013). These findings therefore provide initial evidence that feelings of authenticity may play a role in shaping the link between using positive emotions as tools (but not negative emotions) and subsequent beneficial outcomes.

Study 5

Studies 4a and 4b paint an initial picture of the divergent processes through which using positive and negative emotions as tools affect beneficial outcomes, yet these studies each relied on retrospective, recall-based methods, which introduce a number of alternative explanations for our findings. For example, participants instructed to recall an episode of emotional tool use may have thought about experiences that were less beneficial on average than participants instructed to recall a reactive positive emotional episode. In this case, any differences in beneficial outcomes between these two conditions could have been attributable to recall biases rather than a causal effect of emotional tool use versus reactive emotional experience. Furthermore, in Studies 4a and 4b participants were forced to choose from a small set of frequently studied positive and negative emotions. These studies therefore do not allow us to make causal claims about how using emotions as tools affects beneficial outcomes in daily life across a wide range of emotion experience. An experimental design involving ecologically valid instances of emotional tool use is needed to address these issues.

As such, Study 5 examined whether the distinct implications of using positive versus negative emotions as tools would also emerge in real time across a broader range of emotional experience. We employed an experimental design involving experience sampling in which participants could freely choose which emotions to report. Participants were randomly assigned to spend one week using emotions as tools and one week experiencing emotions reactively. During these two weeks, participants reported on the frequency of their emotional tool use or reactive emotion experiences, as well as the authenticity and beneficial outcomes they experienced in each of those emotional scenarios. We were therefore able to test our proposed model linking emotional tool use (vs. reactive emotions) to beneficial outcomes via authenticity, and compare this process across positive versus negative emotions, all while capturing the *in vivo* experience of a wide range of emotions.

Method

Participants. Two hundred twenty undergraduate students from the University of Michigan enrolled in the study at baseline

(60% women; $M_{\text{age}} = 18.95$; $SD = 1.17$). We used all available experience-sampling responses, except for those in which participants explicitly did not follow instructions (e.g., participants assigned to report on a positive emotion reported on a negative emotion, or vice versa). Response rates and exclusion rates are reported below. We recruited as many participants as possible given our university's subject pool credit allotment during one academic semester. In Studies 4a 4b, we observed key effect sizes ranging from $d > 1.56$ (i.e., the difference in beneficial outcomes between reactive emotions and emotional tool use for positive and negative emotions; the correlation between authenticity and beneficial outcomes for positive emotions). We calculated that the sample of 220 participants recruited across two experimental groups in Study 6 would give us more than 95% power to detect effect sizes of this magnitude.

Procedure. We employed a 2 (positive vs. negative emotion; between subjects) \times 2 (emotions-as-tools vs. reactive emotions; within-subjects) design. Participants were randomly assigned to either the positive emotion or negative emotion condition at the outset of the study. Participants attended two weekly assessments at baseline and the midpoint of the 2-week study period. During each assessment, participants were given one of two sets of emotion regulation instructions for the upcoming week, in counterbalanced order. *Emotions-as-tools* instructions were as follows:

We would like you to make an effort to manage your emotions intentionally. That is, as you go about your day, we would like you to think about which emotions would be useful to feel in each situation you encounter. When we say "useful," we mean in terms of accomplishing whatever goal you might have in that moment (e.g., social, work-related, etc.). When you identify an emotion that might be useful to experience in a particular situation, we would like you to intentionally try to feel this emotion.

Reactive emotion instructions were as follows:

We would like you to let your emotions happen as naturally as possible. That is, as you go about your day, we would like you to allow yourself to feel whatever emotions you happen to feel in each situation you encounter. When we say "just happen," we mean allowing yourself to feel your emotions naturally. If an emotion comes upon you in a given situation, you need not make an effort to alter or manage it.

Each of these instructions was followed by a reminder that participants were to focus on regulating (or reactively experiencing) their positive or negative emotions, depending on condition assignment. For example, participants in the positive emotion condition receiving *emotions-as-tools* instructions would receive the following addendum to their instructions:

In following these instructions, we would like you to focus on your positive emotions, such as feelings of pride, gratitude, love, and compassion. So, when we ask you to intentionally try to feel emotions that are useful in accomplishing your goals, we are specifically referring to your positive emotions.

The analogous addendum for negative emotions was identically worded but referenced anger, anxiety, envy, and guilt.

This design yielded four conditions which determined the instructions participants followed over the 2-week study period. For example, one condition involved one week of regulating positive

emotions as tools between the baseline and midpoint assessments, followed by one week of feeling positive emotions reactively after the midpoint assessment. A second condition also involved positive emotions but reversed the order of weekly regulation instructions (i.e., reactive emotions in week one, emotions-as-tools in week two). Two analogous conditions followed the same schedules while asking participants to specifically focus on regulating (or reactively experiencing) their negative emotions.

Experience-sampling. Between the baseline and midpoint assessments, as well as for one week following the midpoint assessment, participants completed up to five experience-sampling assessments via text message each day during evenly spaced windows between 10:00 a.m. and 10:00 p.m. This was meant to allow us to capture emotion regulation as it unfolded in daily life, while participants were following their corresponding set of instructions.

Each survey began by asking participants whether they had used an emotion as a tool (or experienced an emotion reactively) since the last time they received a text message survey. Participants who responded *no* were directed to a set of unrelated filler questions. Participants who responded *yes* were asked to name the specific emotion they felt. Participants were next asked whether they tried to change the intensity of their emotion and could specify that they tried to “increase intensity,” “decrease intensity,” or “neither.” Participants then reported how intensely they felt the emotion (1 = *not at all*; 5 = *very much*).

To assess beneficial outcomes derived from the situation, participants completed the same two items as in Studies 4a and 4b (i.e., “How satisfied were you with how the situation played out?”; “To what extent did things go well for you in the situation?”). These two items were again highly correlated ($r = .77$), so we again averaged them to form a composite. Participants also reported feelings of authenticity during the situation using the same item as Study 4b (i.e., “To what extent did you feel like you were being your real, genuine self during the situation?”).

Results

Preliminary analyses.

Response rates. Participants completed a total of 9,697 surveys for an average response rate of 63% ($M = 44.08$ surveys per participant; $SD = 19.34$; median: 50). As noted above, we excluded responses for which participants reported on an emotion of the opposite valence as their assigned condition, or a response that clearly did not constitute an emotion (e.g., *intelligence*, *self-deprivation*, *soccer*, *wisdom*, *brotherhood*). We also excluded responses in which participants reported feeling an emotion but did not report a label for that emotion. In total, we excluded 3% of responses, ($N = 307$), leaving 9,390 usable responses across the entire data set. Usable responses and exclusion rates per condition were as follows: positive emotions as tools, $N = 2,281$ (7% of responses excluded; $n = 170$); positive reactive emotions, $N = 2,533$ (4% of responses excluded; $n = 102$); negative emotions as tools, $N = 2,332$ (1% of responses excluded; $n = 16$); negative reactive emotions, $N = 2,224$ (1% of responses excluded; $n = 19$).

Frequency. Participants reported using emotions as tools an average of 6.71 times over the 2-week study period, which amounted to an average of 28% of the time they responded to the text message surveys ($SD = 25\%$, CI [22%, 34%]). Importantly,

replicating Study 3, participants used positive emotions as tools significantly more frequently ($M = 36\%$, $SD = 28\%$, CI [27%, 45%]) than negative emotions ($M = 20\%$, $SD = 19\%$, CI [13%, 27%]; nonoverlapping confidence intervals indicate a significant difference). Both of these rates were higher than in Study 3—in which rates for using positive and negative emotions as tools were 23% and 12%, respectively—which provides a validity check regarding our experimental manipulation in which we instructed participants to use their emotions as tools.

The open-ended nature of our experience-sampling surveys allowed us to examine the extent to which participants used a variety of emotions as tools during the study (see Figure 8). For positive emotions, a total of 93 different emotion words were listed as having been used as a tool; *happiness* was the most common emotion used as a tool ($n = 188$ instances; 23%), followed by *pride* ($n = 60$, 8%), *excitement* ($n = 51$, 6%), *calmness* ($n = 38$, 5%), and *joy* ($n = 35$; 4%). For negative emotions, a total of 53 different emotion words were listed as having been used as a tool. *Anger* ($n = 109$, 22%) was used most frequently, followed by *stress* ($n = 75$, 15%), *sadness* ($n = 63$, 13%), and *anxiety* ($n = 59$, 12%); no other emotion was used more than 5% of the time.

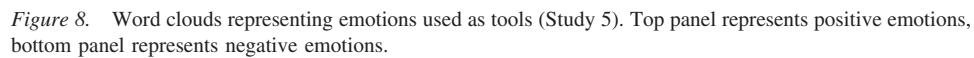
Directionality. Using emotions as tools typically involved increasing emotional intensity: Participants attempted to increase the intensity of their emotions an average of 54% of the time they used emotions as tools ($SD = 41\%$, CI [47%, 61%]). Not surprisingly, this strategy was significantly more common for positive emotions ($M = 66\%$, $SD = 40\%$, CI [57%, 75%]) than negative emotions ($M = 44\%$, $SD = 37\%$, CI [34%, 54%]; nonoverlapping confidence intervals indicate a significant difference).

Participants attempted to decrease the intensity of their emotions far less when using emotions as tools, doing so on average only 13% of the time ($SD = 25\%$, CI [9%, 17%]). Also, not surprisingly, this strategy was significantly more common for negative emotions ($M = 27\%$, $SD = 32\%$, CI [18%, 36%]) than positive emotions ($M = 2\%$, $SD = 7\%$, CI [0%, 5%]; nonoverlapping confidence intervals indicate a significant difference). Participants also relatively rarely reported attempting neither to increase nor decrease the intensity of their emotions ($M = 15\%$, $SD = 29\%$, CI [10%, 20%]).

In sum, increasing (vs. decreasing) the intensity of emotions is the predominant strategy people employ when using emotions as tools. In light of our instructions for the emotional tool use condition (i.e., “intentionally try to feel an emotion”), this finding should come as no surprise. Nonetheless, we still found that increasing emotional intensity was a much more prominent strategy for positive emotions, whereas decreasing emotion intensity is a somewhat more common tactic when using negative emotions as tools.

Does using emotions as tools lead to beneficial outcomes?

We answered these questions using multilevel modeling in R, given that responses were nested within participants. As in Studies 4a and 4b, we observed a two-way interaction between type of emotion (tools vs. reactive) and valence (positive vs. negative; $b = .52$, $p < .001$, CI [.36, .68]; see Figure 9). Using positive emotions as tools led to *less* beneficial outcomes ($M = 3.66$, $SD = .83$) compared with feeling positive emotions reactively ($M = 4.02$, $SD = .75$, $b = -.27$, $p < .001$, CI [−.36, −.18]). In contrast, using negative emotions as tools led to *more* beneficial outcomes



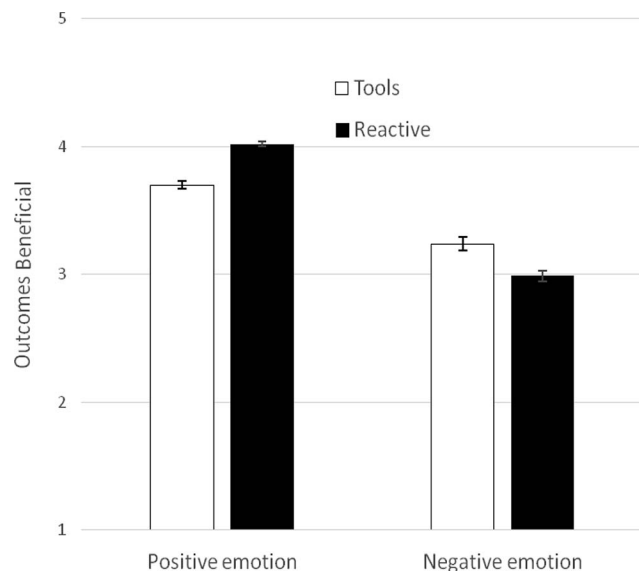


Figure 9. Beneficial outcomes experienced following emotions as tools versus reactive emotions (Study 5). Error bars are ± 1 SE.

($M = 3.24$, $SD = 1.04$) compared with feeling negative emotions reactively ($M = 2.99$, $SD = 0.99$, $b = .25$, $p = .001$, $CI [.13, .38]$).

In sum, these findings nearly perfectly replicate the findings of Studies 4a and 4b, that using positive emotions as tools leads to less beneficial outcomes than feeling positive emotions reactively, whereas using negative emotions as tools appears to enhance the typical outcomes people experience when these emotions occur reactively.

Authenticity. As in Study 4b, people felt more authentic when feeling emotions reactively ($M = 4.07$, $SD = .91$) than when using emotions as tools ($M = 3.69$, $SD = .95$, $b = .31$, $p < .001$, $CI [.22, .40]$). Yet, this difference was larger for positive emotions ($M_{\text{Reactive}} = 4.22$, $SD = .81$; $M_{\text{Tools}} = 3.72$, $SD = .88$, $b = .46$, $p < .001$, $CI [.35, .57]$) than negative emotions, for which it did not reach significance ($M_{\text{Reactive}} = 3.79$, $SD = 1.04$; $M_{\text{Tools}} = 3.63$, $SD = 1.06$, $b = .09$, $p = .08$, $CI [-.06, .24]$). People also felt

more authentic when feeling positive emotions ($M = 4.02$, $SD = 0.87$) than negative emotions ($M = 3.72$, $SD = 1.05$; $b = .34$, $p < .001$, $CI [.18, .49]$).

As in Study 4b, authenticity was closely associated with beneficial outcomes, but primarily for positive emotions: We observed a strong, positive correlation between beneficial outcomes and authenticity for positive emotions, $r = .53$, $p < .001$. In contrast, beneficial outcomes and authenticity were weakly correlated for negative emotions ($r = .09$, $p = .19$; difference between these two correlations: $z = 3.59$, $p < .001$).

We therefore again estimated the indirect effect of using emotions as tools (vs. feeling emotions reactively) on beneficial outcomes through feelings of authenticity, separately for both positive and negative emotions (using multilevel path analysis in lavaan; Rosseel, 2012; see Figure 10). As in Study 4b, for positive emotions, using emotions as tools had a negative, indirect effect on beneficial outcomes through reduced feelings of authenticity ($b = -.16$, $CI [-.19, -.12]$, $p < .001$); when authenticity was included in this mediation model, the negative direct effect documented above of using positive emotions as tools on beneficial outcomes became much smaller ($b = -.10$, $CI [-.16, -.04]$, $p = .002$).

In contrast, also as in Study 4b, for negative emotions this indirect effect was much smaller and nonsignificant ($b = .01$, $CI [-.01, .03]$, $p = .22$; see Figure 10); the positive direct effect documented above of using negative emotions as tools on beneficial outcomes remained of similar size ($b = .23$, $CI [.10, .36]$, $p = .001$). Because the confidence interval for the indirect effect of positive emotions on beneficial outcomes does not include the parameter estimate for the indirect effect of negative emotions on beneficial outcomes (and vice versa), these two indirect effects are significantly different.

Of note, we reran these mediational analyses while taking order into effect (i.e., we ran separate models for participants who received the emotions-as-tools instructions first vs. the reactive emotions instructions first). In both the positive and negative emotion conditions these models yielded nearly identical indirect effects of emotional tool use on beneficial outcomes, through

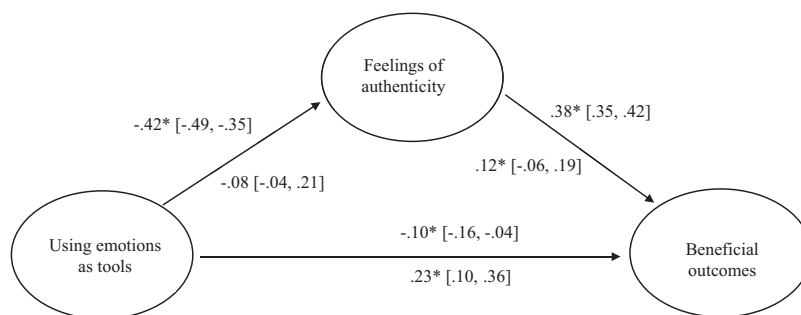


Figure 10. Indirect effect of using emotions as tools on beneficial outcomes through feelings of authenticity (Study 5). * $p < .05$. Path weights are unstandardized regression coefficients. Using emotions as tools is a binary variable based on experimental condition assignment, coded as 0 = reactive emotion condition and 1 = using emotions as tools condition. Path weights above arrows are for positive emotions, path weights below arrows are for negative emotions. Path coefficients, confidence intervals, and p values for indirect effects are presented in the main text.

feelings of authenticity, regardless of the order of experimental instructions.

Providing a direct replication of the pattern of findings in Study 4b, these findings suggest that using emotions as tools reduced the beneficial outcomes people derive from positive emotions in part because reduced feelings of authenticity were associated with reduced benefits from using positive emotions as tools. In contrast, authenticity was only weakly associated with the benefits resulting from negative emotional tool use.

Ancillary analyses. As in Studies 4a and 4b, emotional intensity was higher for reactive positive emotions ($M = 3.94$, $SD = .77$) than when positive emotions were used as tools ($M = 3.66$, $SD = .83$, $b = .29$, $p < .001$, $CI [.18, .41]$). Unlike Studies 4a and 4b, intensity differed only slightly between reactive negative emotions ($M = 3.70$, $SD = .93$) and using negative emotions as tools ($M = 3.77$, $SD = .85$, $b = .07$, $p = .06$, $CI [-.05, .18]$). As in Studies 4a and 4b, the primary effects reported above involving beneficial outcomes held when controlling for emotional intensity.

Discussion

Study 5 used an ecologically valid, experimental paradigm in which participants reported on a wide range of emotion experiences to replicate several of our previous findings. First, as in Study 3, we again found that people use positive emotions as tools more frequently than negative emotions. Second, as in Studies 4a and 4b, we found that using positive versus negative emotions as tools leads to distinct beneficial outcomes, and we shed light on a mechanism through which this process unfolds: Using positive emotions as tools was less beneficial than feeling positive emotions reactively—in part because using positive emotions as tools felt inauthentic—whereas using negative emotions as tools increased the beneficial outcomes people derive from reactively feeling these states, although we again exercise caution in interpreting this process given the cross-sectional nature of our mediation analysis. Most importantly, however, we observed a remarkable pattern of consistency in these findings across Studies 4a and 4b (which employed a recall paradigm) and Study 5, which used an experimental, experience-sampling–based design to capture emotion in real time (compare Figures 5 and 9 as well as Figures 7 and 10). Study 5 therefore attests to the robustness of the key asymmetries we have uncovered regarding positive and negative emotional tool use in daily life.

General Discussion

My stepson has ADHD which requires you to force yourself to be patient, compassionate, sympathetic, and understanding. If not, it results in mass frustration and arguments. It's not a fun way to force yourself to feel because it's not genuine and therefore results in one feeling a lot of resentment afterward. It's like trying to force yourself to be unhuman and not have reactions to blatantly frustration situations.

I recently moved from Massachusetts to Florida. To do that, I had to cancel my cable. I had received a \$300 cancellation fee that I was not told about. Well, moving 1,200 miles is not cheap. I did not have that extra money. I am also not a mean or confrontational person. It is hard for me to get mad at someone. So, to call and talk to them about it, I had to psych myself up and feel angry to be stern with them.

—Two participants in our studies

These epigraphs illustrate the divergent outcomes that appear to be associated with using positive versus negative emotions as tools. In the first, a woman describes intentionally trying to feel compassion—a positive emotion that tends to foster care and concern for needy dependents (Goetz, Keltner, & Simon-Thomas, 2010; Stellar & Keltner, 2014). Yet, here the woman feels strong resentment at having to disingenuously express compassion in the face of her stepson's condition. The implication is that compassion, an emotion that typically produces interpersonal benefits when felt reactively, has in this case produced intrapsychic and interpersonal costs in part because the woman tried to inauthentically use compassion as a tool. Of course, using compassion as a tool in this case may have been better than the alternative of feeling no compassion at all; a flat reaction toward the stepson could indicate parental neglect and could have negative implications for the stepmother and stepson's relationship going forward. Yet, what is clear is that the stepmother's positive emotional experience has been soured because she tried to intentionally force herself into this feeling.

In contrast, the second epigraph describes a woman intentionally trying to feel anger—a negative emotion that is typically functional in contexts requiring confrontation and negotiation (e.g., Andrade & Ho, 2009; Fischer & Roseman, 2007; van Kleef et al., 2004). In line with this function, the woman is using anger to convey to the cable company that they have treated her unfairly and that she deserves a better deal, even though she admits that her feelings of anger are inauthentic and do not represent her true self. A typically aversive emotion experience—which if felt chronically can degrade health and well-being (Chida & Steptoe, 2009; Suls & Bunde, 2005)—has produced a beneficial outcome because the woman used anger as a tool.

These epigraphs underscore a critical asymmetry that we have uncovered in this research: Using positive emotions as tools leads to less beneficial outcomes than feeling positive emotions reactively, whereas using negative emotions as tools—compared with feeling negative emotions reactively—actually increases the tendency for people to experience beneficial outcomes from these emotions. We further found that this paradoxical effect may arise in part because using positive emotions as tools fosters distressing feelings of inauthenticity (Jongman-Sereno & Leary, 2016; Lenton et al., 2013), which is associated with a souring of the desirable and beneficial nature of most positive emotions. In contrast, although we observed that using negative emotions does feel inauthentic, these distressing feelings may not be as problematic because inauthenticity is not linked with reduced beneficial outcomes, perhaps because it signals to an individual that a negative emotional experience is not so bad after all.

We also uncovered a second asymmetry, one that was perhaps not surprising given prior research indicating that people are strongly motivated to experience positive affect: People use positive emotions as tools more frequently than negative emotions. These two asymmetries together paint a fascinating paradox: Using emotions as tools may be a more *prevalent* strategy for positive (vs. negative) emotions, but at least compared with feeling emotions reactively, it may be a more *effective* strategy for negative (vs. positive) emotions in terms of bringing about beneficial outcomes. The unfortunate implication of this paradox is that people's eagerness to use positive emotions as tools may at times cause these emotions to feel sour—at least compared with feeling these

emotions more naturally—whereas people's reluctance to use negative emotions as tools may prevent them from capitalizing on the benefits they might derive from using negative emotions as tools more frequently in appropriate contexts.

Theoretical Implications

Toward optimal use of emotions as tools. Whether owing to innate functionality or socially learned outcomes, emotions are useful to feel in that they tend to promote beneficial outcomes in specific contexts (e.g., Barrett, 2012; Keltner & Haidt, 2003; Lench, 2018; Shariff & Tracy, 2011). This work extends to both positive emotions (e.g., compassion, gratitude, and pride; Algoe, 2012; Shiota et al., 2014; Stellar et al., 2017; Weidman et al., 2016; Williams & DeSteno, 2008) and negative emotions (e.g., anger, envy, guilt; Amodio, Devine, & Harmon-Jones, 2007; Andrade & Ho, 2009; Ketelaar & Tung Au, 2003; Lange & Crusius, 2015; van de Ven et al., 2009; van Kleef et al., 2004). The present findings indicate that although people are aware of the contexts in which positive emotions typically function as tools, this is less the case for negative emotions. People's intuitions of when to use positive emotions as tools is likely explained in part by people's general desire to feel positive emotions (e.g., Kämpfe & Mitte, 2009; Riediger et al., 2009), and this ever-present goal to feel more positive and less negative emotion may hamper people's ability to recognize that negative emotions are useful to feel in certain contexts. The end result is that people use positive emotions as tools much more frequently than negative emotions.

Together, the pervasive tendency to use positive emotions as tools, while neglecting to do so for negative emotions, may not be an ideal emotion regulation strategy, because *both* positive and negative emotions can serve context-specific functions in daily life. Furthermore, Studies 4 and 5 suggest that using negative emotions as tools *enhances* the outcomes people typically derive from feeling these emotions reactively, whereas using positive emotions as tools is actually less beneficial than feeling these emotions reactively. These findings imply that people may be overusing positive emotions as tools in suboptimal fashion, at least in contexts in which they could instead choose to allow their positive emotional experiences to proceed more naturally. In contrast, people may be underusing negative emotions as tools because doing so—in contrast to allowing negative emotions to proceed naturally—can be beneficial.

This paradoxical phenomenon may represent one way in which people's obsession over feeling positive can have undesirable consequences. In related work, Mauss and colleagues (Mauss, Tamir, Anderson, & Savino, 2011; Mauss et al., 2012) have shown that people who place an extreme value on feeling happy, without possessing concrete strategies through which to attain happiness, experience maladaptive intrapsychic outcomes. People's strong beliefs that positive emotions function as tools, and their frequent use of positive emotions as tools, may reflect a similar blind faith in the power of positive emotions to shape life for the better. In general, people who feel more positive emotions fare better in many life domains (e.g., Fredrickson, 2001; Lyubomirsky et al., 2005; Pressman & Cohen, 2005), and frequent positive emotion is definitional to well-being (Busseri & Sadava, 2011; Diener, 1984). However, feeling lots of positive emotion on average is distinct from always trying to use positive emotions as context-specific,

functional tools, even in situations in which negative emotions would be more appropriate to use as tools. The present findings suggest that people would be better served to use negative emotions as tools a bit more frequently, thereby employing a more balanced approach in their use of positive and negative emotions as tools.

Toward a greater understanding of emotional tool use in daily life. The present findings, along with prior work (Tamir, 2016), paint a picture of how using emotions as tools typically proceeds in daily life: One identifies a context-specific goal (e.g., to influence a relationship or accomplish a task) and engages in strategies meant to make oneself feel or express an emotion that functions to help attain that goal (e.g., concentration; outward expression). Most of the time this process involves trying to increase the intensity of one's emotional experience—particularly for positive emotions—but it can sometimes involve trying to decrease the intensity of emotional experience when negative emotions are involved. For example, a parent might feel intense anger when a child spills milk on the sofa, but instead of screaming at the child, he or she might channel this into a more subdued expression of anger meant to teach the importance of not drinking outside of the kitchen.

Using emotions as tools can be juxtaposed with the form of emotion regulation that garners the majority of empirical attention: Hedonically motivated attempts to avoid negative emotion (Gross et al., 2006; Kalokerinos, Résibois, et al., 2017; Webb et al., 2012), or when people anticipate or experience the onset of a negative emotion before engaging in strategies meant to prevent or down-regulate that aversive experience (e.g., reappraisal, suppression; Sheppes & Gross, 2011; Tamir, 2016). Using emotions as tools and hedonic emotion regulation involve partially distinct strategies: The former can involve outward expression (see Study 1), whereas the latter typically involves suppression rather than outward expression (Gross, 1998, 2015). Of course, these two forms of emotion regulation also involve some similar strategies (e.g., concentration and reappraisal; see Study 1 and Gross, 1998, 2015; Webb et al., 2012) and therefore are not polar opposites in this regard.

Our work builds on findings from Tamir (e.g., Tamir, 2009b, 2016) to provide empirical evidence that people use emotions as tools with some regularity in daily life. We found that nearly one in five episodes of emotions such as anger, gratitude, envy, and pride involve people intentionally trying to feel these emotions for useful purposes (as opposed to feeling emotions more reactively). People also regularly use emotions as tools in a context-specific manner by trying to feel emotions that would be expected based on prior literature to be useful in the specific contexts that they are encountering. Specifically, the average participant in Study 3 reported using an emotion as a tool six times during the 14 days he or she was enrolled in the study; these rates were even higher in Study 5 when participants were instructed to make a concerted effort to use emotions as tools. Furthermore, each of the eight emotions assessed in Study 3 was used as a tool at least 10% of the time people reported experiencing it. An emotion regulation tactic which is employed nearly once every other day (or more, if we assume that our five daily text messages did not capture all instances of emotional tool use) and encompasses a broad spectrum of positive and negative emotions constitutes a substantial phenomenon worthy of empirical study. Incorporating emotional

tool use into future empirical work with more regularity could help provide a richer portrait of emotion regulation in daily life.

Limitations and Future Directions

The present work points to several limitations as well as future directions that would help build a greater understanding of emotional tool use. First, our work focused entirely on comparing emotional tool use to reactive emotional experience in terms of producing beneficial outcomes. Another critical comparison is between using emotions as tools and not feeling any emotion at all. For example, in the opening epigraph of the General Discussion, a woman experienced a negative outcome because she inauthentically felt compassion for her stepson, who has ADHD. Our findings suggest that, had the woman reactively (and authentically) felt compassion, the situation would have turned out better. Of course, it would be impossible for the woman to guarantee that such a positive feeling toward her stepson would reactively arise in this scenario. This raises the question of what would have happened if the woman had felt no compassion at all. Our work does not speak to this question. However, future work could shed light on this question by experimentally inducing people to use emotions as tools and, during a separate period of time, to withhold their impulses to use emotions as tools (much like the design we used in Study 5). One could then compare the typical benefits that arise from emotional tool use and withheld emotional tool use. Another interesting comparison that merits future study is that between emotional tool use and hedonic emotion regulation. Our experimental manipulations in Studies 4 and 5 compared emotional tool use (i.e., a form of emotion regulation) with reactive emotions (i.e., not regulating one's emotions). The link between emotional tool use and beneficial outcomes could have been produced in part by the simple act of *any* emotion regulation compared with allowing one's emotions to unfold naturally. This possibility seems particularly relevant for negative emotional scenarios, where any act of emotion regulation might be expected to improve the situation. Future work should therefore directly test whether emotional tool use has distinct implications compared with hedonic emotion regulation.

Second, future work could examine the link between people's beliefs about when positive and negative emotions function as tools and the beneficial outcomes people derive from using these emotions as tools. This issue is important in light of a recent finding by Tamir and Bigman (2018) showing that anger enhanced performance on a laboratory competitive task—a context in which we would expect anger to be useful—primarily among participants who expected anger to be useful in this context. In contrast, among participants who did not expect anger to be useful, anger did not enhance performance. These findings imply that when people use emotions as tools, their belief regarding the efficacy of those emotions likely plays a role in shaping the subsequent beneficial outcomes (see also Ford, Lwi, Gentzler, Hankin, & Mauss, 2018).

Third, future work could dive more deeply into the specific beneficial outcomes that arise from using emotions as tools. Emotions can promote a diverse array of beneficial outcomes, both intrapsychic (e.g., pride typically motivates people to work hard and efficiently; Weidman et al., 2016; Williams & DeSteno, 2008) and interpersonal (e.g., anger tends to lead to confrontation and negotiation; Andrade & Ho, 2009; van Kleef et al., 2004). In

Studies 4 and 5, given that we wished to compare beneficial outcomes of many positive and negative emotions on the same metric, we used a broad measure of outcomes that could encompass the distinct benefits that each of these emotions provide. Future work could perform more targeted investigations of beneficial outcomes specific to one emotion (e.g., performance on an effortful task in the case of authentic pride; a negotiation partner's monetary concession in the case of anger).

Fourth, future work could examine more nuanced forms of emotional experience than we have examined in the present work. For example, in Studies 3–5 we treated emotional tool use and reactive emotional experience as two dichotomous types of emotional episodes. We made this theoretical assumption to facilitate comparisons between these two forms of emotion experience on our key dependent measures (e.g., beneficial outcomes, authenticity) as well as to arrive at a conservative estimate of the frequency of pure episodes of emotional tool use in daily life. However, one could imagine emotional episodes that blend these two descriptions, for example if a person begins to experience an emotional reaction before intentionally channeling it to a purportedly useful outcome. We would be intrigued to see future work examine this type of emotional episode, perhaps using designs in which people describe emotional episodes online as they unfold (e.g., Kalokerinos, Résibois, et al., 2017). Similarly, future work could examine how emotional tool use plays out when people intentionally try to feel a blend of multiple emotions, rather than just one emotion (as was the focus in our studies).

Fifth, future work might examine individual differences in frequency and context-specificity of emotional tool use. Although our focus was on broad patterns in emotional tool use (e.g., people use positive emotions as tools more frequently than negative emotions), individual differences in emotional tool use may have implications for well-being and social functioning. For example, Tamir and Ford (2012) found that people who typically wished to feel anger in confrontational scenarios and happiness in collaborative scenarios—each of which represents a match between emotion function and situational demands—reported higher levels of well-being. An index such as that used by Tamir and Ford (2012), which captures people's tendency to use emotions as tools in a context-sensitive manner, could be viewed as an index of broad emotional intelligence, which includes people's ability to match emotions to appropriate situations (Elfenbein & MacCann, 2017; Mayer et al., 2003).

Coda

A large body of evidence suggests that emotions can be thought of as tools which typically serve useful purposes. The present work provides the first evidence that people do in fact use a wide array of emotions as tools with some regularity in daily life. However, we also found that people appear to have room for improvement in the strategies they employ when using emotions as tools. People display a great eagerness to use positive emotions as tools, even though doing so engenders feelings of inauthenticity compared with reactive positive emotion experience and in turn can produce less beneficial outcomes. At the same time, people fail to frequently use negative emotions as tools even though doing so brings considerable benefits compared with feeling reactive negative emotions. We hope that the present work sparks future

inquiry into the common and consequential phenomenon of emotional tool use.

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