

Trait Emotion Differentiation Is Associated With More Instrumental Emotion Regulation Motives When People Feel Negative in Daily Life

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Emotion differentiation—the ability to precisely label emotions—reflects a nuanced understanding of one's emotional experiences. Researchers posit that this nuance may be associated with knowing how one can use their emotions. As a result, we hypothesize emotion differentiation may be linked with holding instrumental emotion regulation motives, which involve regulating emotions to attain their benefits beyond solely feeling better or worse. In this research, we tested whether trait emotion differentiation was associated with instrumental emotion regulation motives in daily life, (a) in general and (b) at times when people felt strong emotion. To test these links, we used two experience sampling data sets collected in 2020 in Australia (Study 1, $N = 173$; 50.3% White), and in 2016 in Belgium (Study 2, $N = 104$; 100% European). Contrary to our hypotheses, there was no direct association between trait emotion differentiation and instrumental motive use. However, as hypothesized, in both studies, trait emotion differentiation moderated the relationship between emotion intensity and instrumental motives, though only in the case of negative—not positive—emotion. This interaction was such that those higher in trait emotion differentiation endorsed fewer instrumental motives when emotion was less intense, but more instrumental motives when emotion was more intense. This pattern suggests that people high in trait emotion differentiation may endorse instrumental motives flexibly, by regulating their emotions instrumentally when they are more intense, but not when they are less intense. Our findings support the idea that trait negative emotion differentiation may help individuals channel their intense emotions in useful ways.

Keywords: emotion differentiation, emotion regulation, instrumental motives, experience sampling methodology

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Some people find it easy to distinguish what they feel and describe their emotions with specific labels. Others have greater difficulty and use emotion labels more interchangeably, with less precision. The first type of person is skilled in what is termed *emotion differentiation*, such that they label emotions with a high degree of granularity (e.g., “I feel anxious but not sad”) rather than using general labels (e.g., “I feel bad”); Barrett et al., 2001; Kashdan et al., 2015). Poorer emotion differentiation, particularly

of negative emotions, is often associated with clinical symptomatology (e.g., Seah & Coifman, 2022). Conversely, better emotion differentiation is associated with psychological well-being (for a review, see Smidt & Suvak, 2015). However, it is unclear what underlies these benefits. Drawing on a motivational framework of emotion regulation (Tamir, 2016), we examined whether emotion differentiation might be associated with instrumental motives: That is, differentiation may help people regulate their emotions to realize

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their functional benefits beyond pleasure and pain. In two pre-registered daily life studies, we tested whether those higher in emotion differentiation may endorse instrumental motives to channel emotions in useful ways, thereby realizing their emotions to their fuller potential.

The Benefits of Emotion Differentiation

Researchers are increasingly interested in the ability to differentiate one's emotions (e.g., Kashdan et al., 2015). This literature most often conceptualizes emotion differentiation as a trait-like variable that varies between people, but recent research shows that emotion differentiation can also be studied as a momentary skill that varies within a person (e.g., Erbas et al., 2021/2022). Whereas trait emotion differentiation describes a person's general capacity for precisely labeling emotions, momentary emotion differentiation describes how well a person precisely labels emotions in a specific emotional instance. In this research, we focus on trait emotion differentiation, which has previously been linked with improved emotion regulation (Kalokerinos et al., 2019). We focus on trait differentiation because we are interested in between-person effects, examining how differentiating between emotions as a general tendency, or skill, may predict endorsing the total number of instrumental motives across many timepoints. However, we also conduct exploratory analyses with momentary differentiation, which we return to later in the Introduction.

Trait emotion differentiation is associated with a range of psychological benefits. For example, those higher in trait emotion differentiation use emotion regulation strategies more successfully (Barrett et al., 2001; Kalokerinos et al., 2019), show greater empathic accuracy (Erbas et al., 2016), better decision-making (Li & Ashkanasy, 2019), and reduced alcohol consumption (Kashdan et al., 2010) compared with those who are lower in trait emotion differentiation. Consequentially, a recent meta-analysis of 17 studies found that trait negative emotion differentiation protects against engaging in maladaptive behaviors ranging from binge eating to nonsuicidal self-injury (Seah & Coifman, 2022). Research on a related construct, *affect labeling*, which is putting feelings into words (e.g., Torre & Lieberman, 2018), shows similar benefits. For instance, better affect labeling is associated with approach behavior in those with a fear of spiders (Kircanski et al., 2012) and reduced physiological symptoms of arousal for those with a fear of public speaking (Niles et al., 2015). Taken together, this research shows that people who are better able to precisely differentiate their emotions are better able to respond to emotional situations and behave more in line with their goals. However, the mechanisms that underlie this wide range of benefits remain unclear.

Theory provides some clues as to why trait emotion differentiation is generally beneficial. Feelings-as-information theory (Schwarz, 2012) argues that people use subjective experiences—including emotions—to form judgments. Building from this theory, researchers have suggested that being able to differentiate one's emotions provides emotionally relevant information to the individual in their context (Kashdan et al., 2015; Smidt & Suvak, 2015). Accordingly, these researchers posit that understanding one's feelings provides information on how best to respond to one's situation. The ability to precisely differentiate emotions is therefore thought to afford individuals the opportunity to adopt actions and responses that match their goals or motives (Kashdan et al., 2015). To further unpack this

logic, it is necessary to understand the range of motivations people have for regulating their emotions in the first place.

The Role of Emotion Motives

People regulate their emotions for a variety of reasons. Tamir (2016) outlines a taxonomy of motives underlying emotion regulation, suggesting that people may regulate their emotions to feel better or worse in the moment (collectively called hedonic motives), or to gain benefits in other domains (collectively called instrumental motives). Whereas hedonic motives involve pursuing an emotion for the sake of *feeling*, instrumental motives involve pursuing an emotion for the sake of *utility*. Within this framework, Tamir proposed four categories of instrumental motives. People may have *performance motives* to attain a desired outcome (e.g., in cognitive tasks; Erber & Erber, 1994; Gohm, 2003, or competition; Lane et al., 2011); *social motives* targeting relationships with others (e.g., Hackenbracht & Tamir, 2010); *epistemic motives* to learn or reinforce values and worldviews (Tamir, 2016); or *eudaimonic motives* to find meaning or grow as a person (e.g., Oishi & Westgate, 2022; Oliver & Raney, 2011). These instrumental motives are pursued regularly in daily life: In a diary study, all four motives were endorsed at least once over the course of the week (Kalokerinos et al., 2017).

These motives reflect the desired outcome people aim to achieve from emotion regulation, and strategies are the means of getting to that outcome. Motives have been linked with the differential use of emotion regulation strategies suggesting that they also shape emotion regulation behavior (Eldesouky & English, 2019). For example, people who hold social impression management goals are more likely to use strategies that involve suppressing their emotions (Eldesouky & English, 2019). One distinction between hedonic and instrumental motives is that hedonic motives serve no immediate purpose other than sensation. In contrast, instrumental motives are tied to specific ideas about how an emotion can be used to achieve an overarching goal, given the context. For example, a person might want to feel happy because they find happiness pleasant (a hedonic motive), or they might want to feel happy because they think happiness will help them make friends at a networking event (an instrumental motive). The shared contextual specificity suggests a link between instrumental motives and emotion differentiation; a theory we put to the test in the present research. Knowing specifically how one feels is the first step to making use of that feeling, and instrumental motives center on putting emotion to work to accomplish contextually relevant goals. This is in comparison to hedonic motives, which concern feeling better or worse, and do not focus on context in the same way as instrumental motives. Therefore, we thought it possible that trait emotion differentiation may be linked to motivations to regulate emotions in ways that achieve specific, contextually relevant benefits—that is, in instrumental ways. Because we assessed instrumental motive endorsement across a week in the course of everyday life, we hypothesized that trait emotion differentiation would be associated with a greater number of total occasions on which instrumental motives are endorsed.

The Role of Emotion Intensity

In addition to testing *to what degree* trait emotion differentiation is associated with instrumental motives directly, we investigated whether trait emotion differentiation might shape *when* people report instrumental motives. In this, we were guided by research

investigating which emotions are likely to be regulated in instrumental ways. Literature suggests that emotion intensity is a key factor determining the degree and mode of regulation: the more intense an emotion, the more likely it is to be regulated (Blanke et al., 2022; Sheppes, 2020). Accordingly, because they are more likely to become the target of regulation, more (vs. less) intense emotions are likely to afford more opportunities for channeling and using emotion, including in instrumental ways (Kalokerinos & Koval, 2024).

These lines of reasoning led us to hypothesize that trait emotion differentiation would moderate the link between emotion intensity and instrumental motive endorsement. Specifically, we hypothesized that people higher in trait emotion differentiation would report more instrumental motives when their emotions were more intense and fewer instrumental motives when their emotions were less intense. This is because high trait differentiators are better able to recognize and use their emotions to accomplish goals than low differentiators—a skill that is likely to be particularly useful, and enacted, at times when the emotional signal is strong.

The Present Research

We had two main goals in this research. Our first goal was to test whether trait emotion differentiation was associated with endorsing instrumental motives for emotion regulation. To test this, we operationalized instrumental motive endorsement as the total amount of instrumental motives endorsed over the course of the study. We did this based on the idea that high trait emotion differentiation might be associated with endorsing specific instrumental motives on more measurement occasions—leading to a higher total number of instances where instrumental motives are endorsed across a week in daily life. Our second goal was to test whether emotion differentiation moderated the relationship between emotion intensity and instrumental motive endorsement. To do this, we tested whether the association between emotion intensity and total instrumental motive endorsement changed as a function of trait emotion differentiation.

We tested these ideas in two experience sampling methodology (ESM) data sets. ESM involves participants responding to short surveys multiple times over the course of a study, rating experiences as they occur naturally in daily life. Accordingly, this method increases the ecological validity of responses and minimizes recall bias by assessing emotions and motives close in time to when they occur (Bolger et al., 2003; Christensen et al., 2003). Further, it allows researchers to assess many different types of occasions on which people regulate their emotions, thus sampling a greater range of potential emotion regulation motives than afforded by a traditional lab study that might rely on evoked emotions.

We calculated trait emotion differentiation using people's emotion ratings over the course of the study, as they encountered different contexts in their daily lives (Barrett et al., 2001; Kalokerinos et al., 2019; Kashdan et al., 2015; Smidt & Suvak, 2015). To do this, we computed the intraclass correlation (ICC) of same-valenced¹ emotions with one another (i.e., positive emotions and negative emotions separately) within each timepoint within each person. Higher ICCs correspond to less differentiation because emotions are tightly clustered with (i.e., less differentiated from) one another. We then averaged these ICCs for a given individual to provide an index of trait emotion differentiation across the week.

Our hypotheses are preregistered on the Open Science Framework (<https://osf.io/mj46p/>). First, we predicted that trait emotion

differentiation would be associated with holding more instrumental motives for emotion regulation across the course of the study (H1). Second, we predicted that trait emotion differentiation would moderate the relationship between emotion intensity and instrumental motives (H2). Finally, to test whether effects were specific to certain instrumental motives, we explored the interaction between emotion differentiation and intensity to predict each of the individual motive categories separately (i.e., performance, social, epistemic, and eudaimonic motives). Together, these analyses allow us to comprehensively test whether trait emotion differentiation is associated with channeling emotions in instrumental ways.

Momentary Emotion Differentiation

In the present research, we focus on trait differentiation because a large body of work has demonstrated the benefits of trait differentiation (Thompson et al., 2021), and it has been suggested that those benefits may be underscored by emotion regulation processes (Kalokerinos et al., 2019). Momentary emotion differentiation is a new frontier, although initial evidence has also linked momentary differentiation with well-being (Erbas et al., 2021/2022) and emotion regulation (Sels et al., 2024/2024). Based on reviewer feedback, we also include exploratory analyses with momentary differentiation, although given these analyses were not preregistered, we interpret these findings with more caution.

Study 1

In Study 1, participants reported on their momentary experience of positive and negative emotions eight times a day for 7 days. This method allowed us to calculate trait positive and negative emotion differentiation, as well as provide a momentary rating of emotion intensity. After rating current emotions, participants gave momentary self-reports of their motives for regulating toward desired emotions. An advantage of this design is that the ratings of emotion intensity and self-reported emotion regulation motives were measured at the same time and in relation to the same target, thus sharing a context. We tested whether trait emotion differentiation relates to instrumental motive endorsement in daily life (H1), and whether trait emotion differentiation interacts with momentary emotional intensity to predict total instrumental motive endorsement (H2).

Method

Participants

We included 173 Australian-based students and community members, 76% female, $M_{\text{age}} = 28.84$, $SD = 10.24$; Ethnicity: White/Caucasian (50.3%), East Asian (17.3%), South Asian (16.2%), Southeast Asian (9.8%), Mixed Race (2.9%), Middle Eastern (1.2%), Australian Aboriginal or Torres Strait Islander (1.2%), African (.6%), and Latino/Hispanic (.6%). Most participants were recruited through community advertising ($n = 107$), 28 were recruited from a first-year

¹ Research predominantly documents the effects of negative emotion differentiation, as the effects of positive emotion differentiation are less consistent (Liu et al., 2020). Nevertheless, to comprehensively explore the relationship between emotion differentiation and instrumental motives, in Study 1, we tested positive differentiation alongside the more commonly assessed negative differentiation.

student pool, and 38 from a paid research-participation platform. Participants were reimbursed up to \$45AUD or 3% course credits for their participation: More detailed reimbursement information can be found in the [Supplemental Materials](#).

We aimed to recruit at least 152 participants to achieve 90% power to detect a small within-person effect (Murayama et al., 2022). We recruited a total of 183 participants to account for dropout and excluded 10 participants who completed fewer than two surveys over the study period. Given that the target sample size of the study was not determined a priori for our specific research question, we also conducted a post hoc sensitivity analysis (Murayama et al., 2022). This showed the obtained sample size ($N = 173$) was sensitive to detect a small-to-moderate cross-level interaction effect at $r = .21$ with 80% power ($\alpha = .05$, two-tailed).

Design and Procedure

Transparency and Openness. Preregistration of our hypotheses and analysis plan can be found at <https://osf.io/kzam3>. Originally, we also planned to analyze whether emotion differentiation predicted the range of instrumental motives endorsed, and the ratio of instrumental to hedonic motive use. We found no significant effects with these analyses, and as they were less theoretically grounded than the two primary hypotheses, we decided not to replicate these analyses in Study 2 or report them in the main text. These results are included in full in the [Supplemental Materials](#). The data were collected in 2020 and the study comprised three parts: a screener survey, a baseline survey, and a 7-day ESM period.

Screening. To determine eligibility, participants completed a screener survey. Participants were eligible if they owned a smartphone compatible with the survey app (Smartphone Ecological Momentary Assessment 3; O'Brien et al., 2024) and resided in Australia. Participants who did not meet the eligibility criteria were not invited to complete the baseline survey.

Baseline. In the online baseline survey, participants provided informed consent and completed trait measures; for the complete list of items see the codebook at <https://osf.io/mj46p/>. After completing baseline, participants watched two short videos explaining how to use and download the Smartphone Ecological Momentary Assessment 3 smartphone app (O'Brien et al., 2024), which was programed to deliver the ESM surveys.

ESM. The 7-day ESM period began the day after baseline. Adopting a stratified random interval scheme, smartphones were programed to notify participants eight times a day between 10:00 a.m. and 8:00 p.m., with an average duration of 1 hr and 16 min between consecutive beeps. The surveys were programed to arrive at least 30 min apart and participants had 20 min to respond before the survey expired. In total, participants were sent 56 surveys and showed good compliance overall ($M = 73.14\%$, $SD = 23.50\%$). After completion, participants were debriefed and reimbursed, and sent an email detailing how to access a personalized report of their responses.

Materials and Measures

Only measures relevant to the present study are reported here; for the complete list of items, see <https://osf.io/mj46p/>.

Emotion Differentiation and Emotion Intensity. Emotion differentiation and intensity were calculated using momentary

measures of positive and negative emotions. We assessed current emotions by asking, "Right now, how [emotion] do you feel?" for a total of three positive (happy, calm, hopeful) and four negative emotions (anxious, stressed, sad, angry). Within- and between-person correlation matrices for the emotions are included in the [Supplemental Materials](#). These emotions were chosen to cover high and low dimensions of valence and arousal (Posner et al., 2005). Emotions were presented in a randomized order and participants responded on a continuous slider ranging from 0 (*not at all*) to 100 (*very much*), such that higher ratings indicated greater intensity. Trait emotion differentiation was calculated using the R *emodiff* package (Murphy, 2020) to give two scores—one for positive and one for negative emotion differentiation. In line with past work (e.g., Erbas et al., 2018), we used the ICC to measure average consistency between emotions across time for each person (Shrout & Fleiss, 1979). Reliable ICCs are between 0 and 1, so we excluded eight uninterpretable negative values (Giraudeau, 1996). As in previous research (Barrett et al., 2001), we normalized ICCs using Fisher's Z-transformation. We then reverse-scored ($-1 \times \text{ICC}$), so that higher scores indicated higher differentiation. Momentary emotion differentiation was also calculated using the *emodiff* package, again with scores for positive and negative momentary emotion differentiation. The momentary emotion differentiation index is directly derived from the ICC, the between-person emotion differentiation index, and indicates, for each given timepoint, a person's level of differentiation between emotions. The index is a relative measure of emotion differentiation: it shows how each given timepoint contributes to a person's overall level of emotion differentiation, and allows to capture within-person fluctuations in differentiation. For equations and more details, see Erbas et al. (2021/2022).

We also used momentary emotion measures to calculate positive and negative emotion intensity. For each survey, we averaged the score for all three positive emotions to give a score of positive emotion intensity ($\omega_{\text{between-person}} = .96$; $\omega_{\text{within-person}} = .74$), and all four negative emotions to give a score of negative emotion intensity ($\omega_{\text{between-person}} = .92$; $\omega_{\text{within-person}} = .76$). Thus, emotion intensity was measured at the survey level (Level 1) and reflects the intensity at which people experienced positive or negative emotion in the moment. Likewise, momentary emotion differentiation was measured at the Level 1 and reflects the degree to which emotions were differentiated in the moment. In contrast, emotion differentiation was measured at the person level (Level 2) and reflects the average degree to which people differentiated their positive or negative emotions across the study.

Emotion Regulation Motives

After rating current emotion, participants were asked to report their emotion goal by answering the question, "Right now, how [emotion] do you want to feel?" for the same seven emotions, on a slider scale ranging from 0 (*not at all*) to 100 (*very much*). Next, we assessed emotion regulation motives by asking participants, "What are your motivations for wanting to feel these different emotions? Please select all that apply." Hedonic motives were measured with the response options: "Increasing my immediate pleasure," and "Increasing my immediate displeasure." Based on Tamir's (2016) instrumental motives, we measured instrumental motives with the options: "Helping me undertake a task" (performance motive), "Helping me learn something" (epistemic), "Helping me with my

social relationships” (social), “Helping me grow as a person” (eudaimonic). We also included the options: “I have another motivation,” and “I do not have a motivation.” Participants could select as many options as applied to them. We also included the options: “I have another motivation,” and “I do not have a motivation.” Participants could select as many options as applied to them. We calculated total endorsement of instrumental motives as the sum of all reported instrumental motives per survey, for each person.

Analytic Strategy

Responses completed in less than 650 ms (3,668 items; .02% of all items) and surveys that had more than 50% of the items completed in less than 650 ms (149 surveys; .02% of all surveys) were removed prior to analysis to reduce careless responding (Geeraerts & Kuppens, 2020).

All analyses were performed using the statistical software R (Version 4.2.2) and the *lme4* package (Bates et al., 2009). To test H1, we ran multilevel generalized linear models (surveys at Level 1 nested within persons at Level 2) separately for positive and negative emotions. We used generalized linear models using a Poisson distribution, because our outcome was a count variable². Each model included a fixed effect of person-level trait emotion differentiation (grand-mean centered) at Level 2 and a random intercept for participants. To control for each individual’s mean emotion levels, each model also included a fixed effect of the person mean of positive or negative emotion (grand-mean-centered) at Level 2. Controlling for mean levels of emotions is important when studying emotion differentiation, since the scale boundaries mean that it is not possible to demonstrate emotion differentiation at both very low and very high levels of emotion.

To test H2, we ran multilevel generalized linear models separately for positive and negative emotions and included a fixed effect of the cross-level interaction between person-level emotion differentiation (at Level 2, grand-mean-centered) and within-person momentary emotion intensity (at Level 1, person-mean-centered). All models controlled for the person mean of positive or negative emotion (at Level 2, grand-mean-centered) and included a random intercept for participants and a random slope for emotion intensity.

Results

Table 1 illustrates the frequencies of motives and Table 2 illustrates descriptive statistics of emotion differentiation and emotion intensity across Study 1 and Study 2. Performance motives were the most frequently chosen instrumental motive in Study 1, but all four motives were chosen at least once by majority of participants, ranging from 78% choosing an epistemic motive at least once, to 95% choosing a performance motive.

H1: Emotion Differentiation and Instrumental Motives

We report the results of multilevel models predicting instrumental motive use from trait emotion differentiation controlling for trait emotion intensity in Table 3. We ran these models separately for positive and negative emotions. Neither positive nor negative emotion differentiation predicted the total number of instrumental motives that participants reported.

H2: The Interaction Between Emotion Differentiation and Emotion Intensity

We report the results of multilevel models predicting instrumental motive endorsement from the interaction between trait emotion differentiation and momentary emotion intensity in Table 4. These models control for trait emotion intensity, and we ran the models separately for positive and negative emotions. There was no significant interaction between trait positive emotion differentiation and momentary positive emotion intensity in predicting the total number of instrumental motives. However, there was a significant interaction between trait negative emotion differentiation and momentary negative emotion intensity (depicted in Figure 1).

We followed up this significant interaction by computing the simple slopes of emotional intensity at low ($-1 SD$), average (the mean), and high ($+1 SD$) levels of emotion differentiation, which revealed that experiencing more intense negative emotions than one usually does predicted more instrumental motives among participants who were average ($b = .005$, 95% CI [.002, .007], $p = .001$) and high ($b = .008$ [.004 .012], $p < .001$) in negative emotion differentiation. However, the intensity of negative emotions did not predict instrumental motives among those who were low in negative emotion differentiation ($b = .001$ [-.002, .004], $p = .476$). This pattern is reflected in the Johnson–Neyman interval [$-1.69, -0.34$]³, which demonstrated that the association between emotion intensity and instrumental motives was only nonsignificant at low levels of emotion differentiation.

Exploratory Analyses: Individual Motives

Given the total number of instrumental motives included four categories of motives (performance, social, epistemic, eudaimonic), we probed the significant interaction by testing the interaction for negative emotion on each category separately. We did this to explore whether one or some motives in particular drove the moderation effect. While we preregistered these analyses, we made no prediction as to which of the individual motives may drive the association.

We conducted multilevel logistic models with the same model specifications as the interaction analysis reported above, treating each instrumental motive category as the outcome (yes/no). Given multiple comparisons, we used Bonferroni corrections, whereby we divided the α of .05 by 4 (the number of motives), which gives the corrected α of .0125. We found significant interactions between trait negative emotion differentiation and momentary negative emotion intensity for social motives, but not performance, eudaimonic, or epistemic motives. We followed up the significant interaction with simple slopes analyses. This revealed that greater momentary negative emotional intensity predicted more social motives among those above average in emotion differentiation, but no associations

² We initially analyzed results using linear models in both Studies 1 and 2, but an anonymous reviewer rightly pointed out that a generalized linear model using the Poisson distribution would be more appropriate for count data. There was no evidence of overdispersion, making the Poisson distribution appropriate. The core finding regarding H2 remained significant using both analytic approaches.

³ See Supplemental Materials for a plot to show the range of values on the moderator (trait negative emotion differentiation) at which the slope of the predictor (momentary negative emotion intensity) is significant/nonsignificant at the level of $\alpha = .05$.

Table 1
Descriptive Statistics for Motives at the Survey and Person Level by Study

Variable	Event level				Person level					
	<i>n</i> surveys with motive		% surveys with motive		<i>M</i> % (<i>SD</i>) surveys on which motive was reported		% of participants reporting motive at least once		<i>M</i> (<i>SD</i>) times motive reported	
	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2
Hedonic motives										
Increase pleasure	3,517	2,476	57.67	28.13	2.67 (5.35)	0.50 (2.03)	95.91	97.12	20.57 (15.68)	23.81 (18.69)
Increase displeasure	325	209	5.33	2.37	0.46 (2.64)	0.05 (0.32)	42.11	31.73	1.90 (4.49)	2.01 (7.07)
Instrumental motives										
Performance	3,153	2,115	51.70	24.03	2.58 (4.65)	0.45 (0.79)	95.32	94.23	18.44 (13.30)	20.34 (14.18)
Epistemic	1,445	1,158	23.69	13.16	1.19 (3.74)	0.18 (0.51)	77.78	95.19	8.45 (11.23)	11.13 (10.62)
Social	1,742	1,169	28.56	13.28	1.45 (4.23)	0.13 (0.38)	82.46	88.46	10.19 (11.84)	11.24 (10.23)
Eudaimonic	1,765	737	28.94	8.37	1.68 (5.17)	0.07 (0.31)	81.87	87.50	10.32 (12.56)	7.09 (8.53)
Another motive	534	1,373	8.76	15.60	0.40 (2.08)	0.02 (0.51)	45.03	90.38	3.12 (7.38)	13.20 (13.90)
No motive	33	2,755	0.54	31.30	0.00 (0.00)	0.95 (4.92)	14.62	96.15	0.19 (0.51)	26.49 (21.02)

Note. We calculated the mean % (standard deviation) of surveys in which each participant reported this motive because some participants completed every survey sent, while others did not, and we wanted to capture the proportion of surveys that participants tended to report each motive on average.

for those who were average and below average in emotion differentiation. For the full statistics, see [Supplemental Materials](#).

Exploratory Analyses: Momentary Emotion Differentiation

To test the interaction effect with momentary emotion differentiation (in place of trait emotion differentiation), we ran the same multilevel generalized linear models separately for positive and negative emotions. These models included a fixed effect of the cross-level interaction between momentary-level emotion differentiation (at Level 1) and within-person momentary emotion intensity (at Level 1, person-mean-centered). All models controlled for the person mean of positive or negative emotion (at Level 2, grand-mean-centered) and included a random intercept for participant and a random slope for emotion intensity. There were no significant effects, see [Table 5](#).

Discussion

Study 1 explored the association between trait emotion differentiation and instrumental motive use in everyday life. Contradicting H1, we found no direct association between emotion differentiation and instrumental motive use. However, we did find a significant

interaction between trait negative emotion differentiation and momentary emotional intensity predicting instrumental motive use (H2). This interaction was such that those who were better at differentiating negative emotions reported greater instrumental motive use *when negative emotions were more* (compared to less) *intense*. In contrast, people who were below average at differentiating negative emotions showed no association between the intensity of negative emotions and endorsing instrumental motives. Therefore, better emotion differentiators do not *always* report more instrumental motives, but they do in circumstances when their emotions are more intense; in other words, when one's emotions are more salient, or in circumstances that afford more opportunity for/to benefit from regulation. This is consistent with the theory that suggests people high in trait emotion differentiation are better able to respond effectively to their context ([Kashdan et al., 2015](#)), in this case, the context of more intense emotion. This may be because better negative emotion differentiators are attuned to the need to flexibly regulate, or not, depending on the level of emotion one feels. That is, high negative emotion differentiators may recognize less need to attend to or channel low intensity negative emotions, which are generally common in daily life and often require no regulation ([Brans et al., 2013](#); [Kalokerinos et al., 2020](#)).

Exploring whether trait negative emotion differentiation and momentary negative emotional intensity interact to predict specific

Table 2
Descriptive Statistics for Emotion Intensity and Emotion Differentiation by Study

Variable	<i>M</i>		<i>SD</i> _{within}		<i>SD</i> _{between}		ICC	
	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2
Negative emotion intensity	24.00	24.18	12.31	18.70	14.57	9.87	.54	.20
Positive emotion intensity	57.02		13.23		17.75		.60	
Trait negative emotion differentiation	-0.86	-0.81			0.35	0.33		
Trait positive emotion differentiation	-0.88				0.32			

Note. Emotion intensity (Level 1) was assessed on a slider scale ranging from 0 (*not at all*) to 100 (*very much*). We did not investigate positive emotion in Study 2. Trait emotion differentiation (Level 2) was calculated separately for each individual such that higher scores represent greater emotion differentiation, and lower scores represent lower emotion differentiation. *SD*_{within} indicates within-person standard deviation and ICC indicates intraclass correlation, and both variables are calculated only for momentary (Level 1) variables. ICC = intraclass correlation.

Table 3*Study 1: Total Instrumental Motives Predicted by Emotion Differentiation*

Predictor	Total instrumental motive					
	Incidence rate ratio	<i>z</i> value	<i>p</i>	Incidence rate ratio	<i>z</i> value	<i>p</i>
(Intercept)	1.07 [0.95, 1.20]	1.08	.281	1.07 [0.95, 1.20]	1.09	.276
Trait negative emotion differentiation (L2)	0.74 [0.53, 1.04]	-1.75	.079			
Trait negative emotion intensity (L2)	1.00 [0.99, 1.00]	-0.91	.364			
Trait positive emotion differentiation (L2)				1.07 [0.74, 1.55]	0.38	.706
Trait positive emotion intensity (L2)				1.01 [1.00, 1.01]	1.97	.049

Note. L2 = Level 2: These variables were at the between-person level and were grand-mean-centered prior to inclusion in analysis. Significant *p* values (<.05) are bolded.

instrumental motives, we found a significant interaction only for social motives. This suggests that those who are better at labeling their negative emotions under emotionally intense circumstances may be particularly inclined to channel their emotions into improving social relationships. Of note, is that these data were collected during the initial months of the COVID-19 pandemic (May–July, 2020), where Australia experienced little infection but strict lockdown policies (Moeck et al., 2023). Social motives may have been particularly salient during a time when the meaning of social interactions was significantly impacted. Building on these novel findings, we sought to conceptually replicate these associations in a second study.

Study 2

Study 2 conceptually replicated Study 1 using another ESM data set collected in 2016 and originally reported by Dejonckheere et al. (2019). This data set included analogous measures to Study 1 but differed in that participants were asked to report on emotions and motives as they pertained to a recent event in their daily lives. Because we previously found no evidence that positive emotion differentiation was related to instrumental motive use, in Study 2, we tested only negative emotion differentiation.

Aiming to replicate the main findings of Study 1, we tested whether trait negative emotion differentiation predicted reports of instrumental motives in daily life (H1) and whether trait negative emotion differentiation moderated the relationship between momentary

negative emotional intensity and instrumental motives (H2). Again, we preregistered testing the interaction on separate instrumental motive categories but made no a priori predictions as to which specific motives would be related to emotional intensity as a function of emotion differentiation.

Method

Participants

The final sample comprised 104 participants (79% female) aged between 17 and 50 years old ($M = 24.04$, $SD = 6.78$) from a community sample in Belgium. We did not measure ethnicity, but we did measure nationality and 95% of participants reported being Belgian, 1% German, 1% Italian, 1% Polish, 1% Dutch, and 1% Russian and Belgian.

We originally aimed to recruit 100 participants and had 306 responses to an advert posted on flyers and online. From this group, we randomly contacted potential participants to take part in the study until we achieved the desired sample size. Participants responded in Dutch: below, we describe the English wording, which is close to Study 1 (see the codebook at <https://osf.io/mj46p/> for the original Dutch wording). We conducted a post hoc sensitivity analysis on the final recruited sample, which revealed the obtained sample size was sensitive to detect a moderate cross-level interaction effect at $r = .27$ with 80% power ($\alpha = .05$, two-tailed; Murayama et al., 2022).

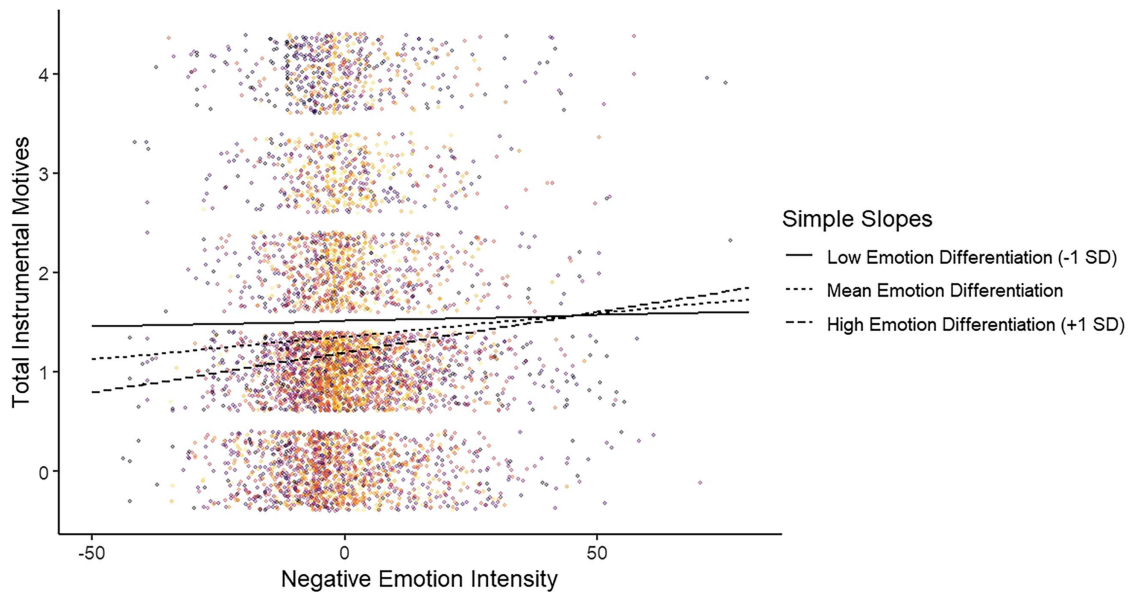
Table 4*Study 1: Total Instrumental Motives Predicted by the Interaction Between Emotion Differentiation and Emotion Intensity*

Predictor	Total instrumental motive					
	Incidence rate ratio	<i>z</i> value	<i>p</i>	Incidence rate ratio	<i>z</i> value	<i>p</i>
(Intercept)	1.06 [0.94, 1.19]	0.91	.362	1.06 [0.94, 1.20]	1.02	.306
Trait negative emotion differentiation (L2)	0.74 [0.53, 1.04]	-1.72	.086			
Momentary negative emotion intensity (L1)	1.01 [1.00, 1.01]	4.42	<.001			
Trait negative emotion intensity (L2)	0.99 [0.99, 1.00]	-1.45	.148			
Trait Negative Emotion Differentiation (L2) × Momentary Negative Emotion Intensity (L1)	1.01 [1.00, 1.02]	2.90	.004			
Trait positive emotion differentiation (L2)				1.08 [0.74, 1.56]	0.39	.693
Momentary positive emotion intensity (L1)				1.00 [1.00, 1.00]	-1.08	.279
Trait positive emotion intensity (L2)				1.01 [1.00, 1.01]	2.40	.016
Trait Positive Emotion Differentiation (L2) × Momentary Positive Emotion Intensity (L1)				1.00 [0.99, 1.00]	-0.77	.444

Note. L2 = Level 2: These variables were at the between-person level and were grand-mean-centered prior to inclusion in analysis. L1 = Level 1: These variables were at the within-person level and were person-mean centered prior to inclusion in analysis. Significant *p* values (<.05) are in bold.

Figure 1

Study 1: Instrumental Motives Predicted by Emotion Intensity at Each Level of Trait Emotion Differentiation



Note. Each dot represents a survey. Colors represent different levels of emotion differentiation skill: darker purple = below average ($-1 SD = -0.32$), lighter purple = average, orange = above average ($+1 SD = 0.34$). See the online article for the color version of this figure.

Design and Procedure

Transparency and Openness. Preregistration of our hypotheses and analysis plan, as well as the full data, can be found at <https://osf.io/esfm2>. The study comprised two parts: a baseline survey followed by a 14-day ESM period.

Baseline. Participants were invited to complete the baseline survey in small groups in the lab. Researchers explained the purpose and procedure of the study, then participants completed baseline questionnaires and were provided with a Motorola smartphone with the mobileQ (Meers et al., 2020) app installed to complete the ESM surveys.

ESM. The ESM period began the day after baseline and lasted for 14 days. Adopting a stratified random interval scheme, smartphones were programmed to beep seven times a day between the hours of 10:00 a.m. and 10:00 p.m., with an average duration of 1 hr and 43 min between consecutive beeps ($SD = 42$ min). The researchers instructed participants to carry the phone with them everywhere, and to respond within 90 s otherwise, the survey would be missed. In total, participants were sent 98 surveys, and overall compliance was good ($M = 86.10\%$, $SD = 16.06\%$).

Every survey asked participants to rate their current emotions. Participants were then asked whether they experienced a negative event. If they did, participants were asked to describe the most

Table 5

Study 1: Test Statistics for the Interaction Between Momentary Emotion Differentiation and Momentary Emotion Intensity in Predicting Total Instrumental Motives

Predictor	Total instrumental motive					
	Positive emotion			Negative emotion		
	Incidence rate ratio	<i>z</i> value	<i>p</i>	Incidence rate ratio	<i>z</i> value	<i>p</i>
(Intercept)	1.30 [0.70, 2.40]	0.84	.403	1.12 [0.86, 1.46]	0.83	.406
Momentary positive emotion differentiation (L1)	1.12 [0.80, 1.56]	0.67	.504			
Momentary positive emotion intensity (L1)	1.00 [0.99, 1.01]	-0.83	.409			
Momentary Positive Emotion Differentiation × Momentary Positive Emotion Intensity	1.00 [0.99, 1.00]	-0.68	.499			
Momentary negative emotion differentiation (L1)				0.98 [0.92, 1.05]	-0.53	.598
Momentary negative emotion intensity (L1)				1.00 [1.00, 1.01]	1.76	.079
Momentary Negative Emotion Differentiation × Momentary Negative Emotion Intensity				1.00 [1.00, 1.00]	0.13	.897

Note. L1 = Level 1: These variables were at the within-person level and were person-mean centered prior to inclusion in analysis.

intense negative event since the last survey, then respond to a series of questions probing the event, as well as whether a range of emotion regulation strategies were used. Finally, participants reported their motives for using these emotion regulation strategies. If participants did not experience a negative event, they answered the same set of questions about any event since the last survey. For a complete list of items, please see <https://osf.io/mj46p/>.

Materials and Measures

Emotion Differentiation and Intensity. Participants responded on a continuous slider ranging from 0 (*not at all*) to 100 (*very much*) to the question “How [emotion] did you feel during the event?” and we assessed three negative emotions: sad, angry, and stressed. Unlike Study 1, Study 2 did not include the emotion “anxious.” As in Study 1, trait and momentary emotion differentiation were calculated using the *emodiff* package in R. As in Study 1, we calculated a score of negative emotion intensity for each participant for every survey by averaging the score for all three negative emotions ($\omega_{\text{between-person}} = .84$; $\omega_{\text{within-person}} = .69$).

Emotion Regulation Motives. Next, participants were asked a series of questions about an event (since the last survey), and whether they used a range of emotion regulation strategies. After rating strategy use, participants were asked, “What did you try to achieve by using the strategies mentioned earlier? Please select all that apply.” Instrumental motives were measured with the response options: “To help me do something” (performance motive), “To help me learn something” (epistemic motive), “To help with my social relationships” (social motive), “To help me grow as a person” (eudaimonic motive). The survey also included the options: “I had another aim in using these strategies,” and “I did not have an aim in using these strategies.” We calculated total endorsement of instrumental motives as the sum of all reported instrumental motives per survey, for each person.

Analytic Strategy

All analyses were performed using R and the *lme4* package (Bates et al., 2009), and replicated the analyses described in Study 1.

Results

Mirroring Study 1, Study 2 found that performance motives were the most frequently chosen instrumental motive. All four motives were chosen at least once by the majority of participants, ranging from 88% choosing a eudaimonic motive at least once to 95% choosing an epistemic motive at least once, see Table 1.

H1: Emotion Differentiation and Instrumental Motives

We report the results of models predicting instrumental motive use from trait negative emotion differentiation controlling for trait negative emotion intensity in Table 6. Replicating Study 1, negative emotion differentiation did not predict instrumental motive use directly.

H2: The Interaction Between Emotion Differentiation and Emotion Intensity

We report the results of models predicting instrumental motive endorsement from the interaction between trait emotion

differentiation and momentary negative emotion intensity in Table 4. This model controls for trait emotion intensity. Also replicating Study 1, we found trait negative emotion differentiation and momentary negative emotion intensity interacted to predict total reported instrumental motives, shown in Figure 2. Simple slopes revealed experiencing more intense negative emotions than one usually does predicted more instrumental motives among participants who were low ($-1SD$; $b = .007$, 95% CI [.004, .009], $p < .001$), average (mean; $b = .009$ [.007, .010], $p < .001$), and high ($+1SD$; $b = .011$ [.008, .013], $p < .001$) in negative emotion differentiation, Johnson–Neyman interval [-14.13 , -0.87]⁴. Though the pattern holds for all levels, the association between intensity and instrumental motives is strongest among high differentiators⁵.

Exploratory Analyses: Individual Motives

As in Study 1, we tested the interaction on each specific motive. We found a significant interaction for eudaimonic motives, but not for performance, social, or epistemic motives. Follow-up tests revealed that experiencing more intense negative emotions than one usually does predicted more eudaimonic motives among participants at every level of emotion differentiation, but the effect is still strongest for those who are high in emotion differentiation, see Supplemental Materials.

Exploratory Analyses: Momentary Emotion Differentiation

To again test the interaction effect with momentary emotion differentiation, we ran the same multilevel generalized linear models, this time just for negative emotion. These models were identical to Study 1. This revealed a significant interaction effect, see Table 7. Decomposing the interaction showed that experiencing more intense negative emotions than one usually does predicted more instrumental motives among participants at all levels of momentary negative emotion differentiation, Table 8. Though the pattern holds for all levels, the association between momentary intensity and instrumental motives was strongest when people experienced lower momentary emotion differentiation, Figure 3.

Discussion

Study 2 replicated the key results of Study 1. As in Study 1, negative emotion differentiation was not directly associated with instrumental motives (contradicting H1), but trait negative emotion differentiation moderated the link between momentary emotion intensity and instrumental motives (H2). The nature of this interaction mirrored the pattern in Study 1: High emotion differentiators reported more instrumental motives when negative emotions were

⁴ See Supplemental Materials for a Johnson–Neyman plot to show the range of values on the moderator (trait negative emotion differentiation) at which the slope of the predictor (momentary negative emotion intensity) is significant/nonsignificant at the level of $\alpha = .05$.

⁵ In Study 2, participants reported the instrumental motives they held during their most intense negative event since the last survey, or during any other event if they did not experience a negative event since the last survey. The significant interaction was replicated when testing only those surveys on which participants reported experiencing a negative event (See Supplemental Table S12).

Table 6*Study 2: Total Instrumental Motives Predicted by Emotion Differentiation and Emotion Intensity*

Predictor	Total instrumental motive					
	Hypothesis 1 (direct effect)			Hypothesis 2 (interaction)		
	Incidence rate ratio	z value	p	Incidence rate ratio	z value	p
(Intercept)	0.49 [0.43, 0.56]	-10.59	<.001	0.46 [0.40, 0.53]	-10.85	<.001
Trait negative emotion differentiation (L2)	0.96 [0.64, 1.4]	-0.23	.822	0.99 [0.64, 1.52]	-0.04	.969
Trait negative emotion intensity (L2)	1.01 [1.00, 1.03]	1.74	.082	1.00 [0.99, 1.02]	0.59	.553
Momentary negative emotion intensity (L1)				1.02 [1.01, 1.02]	11.01	<.001
Trait Negative Emotion Differentiation (L2) × Momentary Negative Emotion Intensity (L1)				1.01 [1.00, 1.02]	2.22	.027

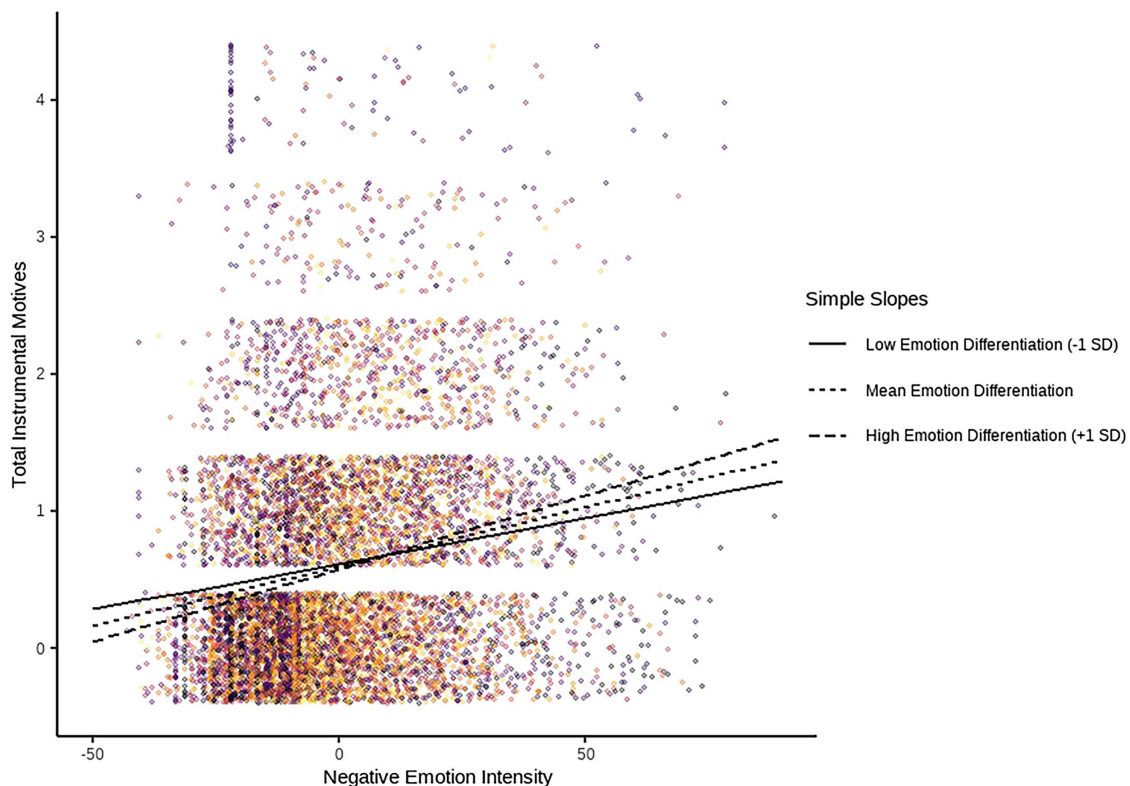
Note. L2 = Level 2: These variables were at the between-person level and were grand-mean-centered prior to inclusion in analysis. L1 = Level 1: These variables were at the within-person level and were person-mean centered prior to inclusion in analysis. Statistically significant *p* values (<.05) are in bold.

more intense, and fewer instrumental motives when negative emotions were less intense. Notably, emotional intensity also significantly predicted instrumental motives among low differentiators in Study 2, but not in Study 1. Nevertheless, the interaction indicates that the relationship for high emotion differentiators was stronger than for low differentiators, replicating Study 1.

Unlike Study 1, when exploring whether trait negative emotion differentiation and momentary negative emotional intensity interact to predict specific instrumental motives, we found a significant interaction for eudaimonic motives only. This suggests that those

who are better at labeling their negative emotions under emotionally intense circumstances are inclined to channel their emotions toward self-improvement. This differs from Study 1, which found an effect only on social motives. Together, these patterns suggest that better negative emotion differentiation may be associated with a range, rather than a specific type of instrumental motive, in ways that likely depend on context.

In the exploratory analyses, we found a significant interaction between momentary emotion differentiation and momentary negative affect in predicting instrumental motives. As in-the-

Figure 2*Instrumental Motives Predicted by Intensity at Each Level of Trait Emotion Differentiation*

Note. Each dot represents a survey. Colors represent different levels of emotion differentiation skill: dark purple = below average (-1 SD = -0.33) to orange = above average (+1 SD = 0.33). See the online article for the color version of this figure.

Table 7

Study 2: Test Statistics for the Interaction Between Momentary Negative Emotion Differentiation and Momentary Emotion Intensity in Predicting Total Instrumental Motives

Predictor	Total instrumental motive		
	Incidence rate ratio	<i>z</i> value	<i>p</i>
(Intercept)	0.51 [0.34, 0.76]	-3.28	.001
Momentary negative emotion differentiation (L1)	0.96 [0.83, 1.11]	-0.52	.604
Momentary negative emotion intensity (L1)	1.03 [1.02, 1.03]	6.46	<.001
Momentary Negative Emotion Differentiation × Momentary Negative Emotion Intensity	1.00 [0.99, 1.00]	-2.47	.013

Note. L1 = Level 1: These variables were at the within-person level and were person-mean-centered prior to inclusion in analysis. Statistically significant *p* values (<.05) are in bold.

moment negative affect increases, *low* emotion differentiators tend to endorse more instrumental motives. This finding appears to run counter to results with trait emotion differentiation, a pattern that we explore more in the General Discussion section. This distinction underscores the value of further investigating both momentary and trait emotion differentiation.

General Discussion

Emotion differentiation is associated with a wide range of psychological benefits, but the mechanisms underlying these benefits are not well understood. One theory is that emotion differentiation provides individuals with contextually relevant information that allows them to respond in ways that align with their goals (Barrett, 2017; Kashdan et al., 2015). To put this theory to the test, we examined whether trait emotion differentiation was associated with how people want to use their emotions in daily life, both in general and particularly when they experience intense emotion.

We found no direct association between trait emotion differentiation and instrumental motives for emotion regulation (H1). However, in both studies, we found a consistent effect such that trait negative emotion differentiation predicts *when* people hold instrumental motives (H2). We found that high differentiators held significantly more instrumental motives under more (vs. less) intense emotional conditions—when emotions are more salient and when the impact or benefit of emotions might be stronger. This finding helps to elucidate the *how* and *why* behind the benefits of emotion differentiation. It suggests that when emotions are more intense, people higher in trait emotion differentiation are more likely to see uses for their emotions, when the benefits of channeling emotion into instrumental ends may be the strongest.

We also conducted exploratory follow-up analyses to determine if these effects were driven by any one particular motive. In this, we observed no consistent effects. Study 1 only found a significant

effect for social motives, and Study 2 only for eudaimonic motives. This variation could indicate that emotion differentiation is a broad skill that allows individuals to channel their emotions in pursuit of a wide range of goals, rather than into social, personal, or performance domains per se. If so, this speaks to the utility of emotion differentiation as a domain-general ability for responding effectively to a variety of contexts.

We found no relationship between positive emotion differentiation and instrumental motives in Study 1, either directly or when considering emotional intensity. One explanation for these null findings is that the three positive emotions we included were not relevant to the motives. For example, the positive emotions happy, calm, and hopeful are not as interpersonally relevant as social emotions such as admiration or trust. Alternatively, this null finding could indicate that differentiating positive emotions does not bring benefits in terms of channeling intense emotions in instrumental ways. Either way, more work is needed to better understand positive emotion differentiation.

We also conducted exploratory analyses with momentary emotion differentiation. In contrast to the results with trait emotion differentiation, in Study 2 (but not Study 1), we found that the link between momentary negative emotion and endorsement of instrumental motives was strongest when momentary emotion differentiation was low. We hypothesize this is because the more precisely one labels their emotions in the moment (i.e., the better one's momentary emotion differentiation), the clearer one should be about how to channel or use that emotion. This should translate to holding fewer instrumental motives in the moment. That is, in moments when differentiation is higher than usual, people are better able to choose one specific motive to serve their needs in a given context. Although we are hesitant to overinterpret this result, as it was not preregistered, and only present in Study 2, our results provide a preliminary first step in unpacking a potential process of momentary emotion differentiation. The distinctions between trait

Table 8

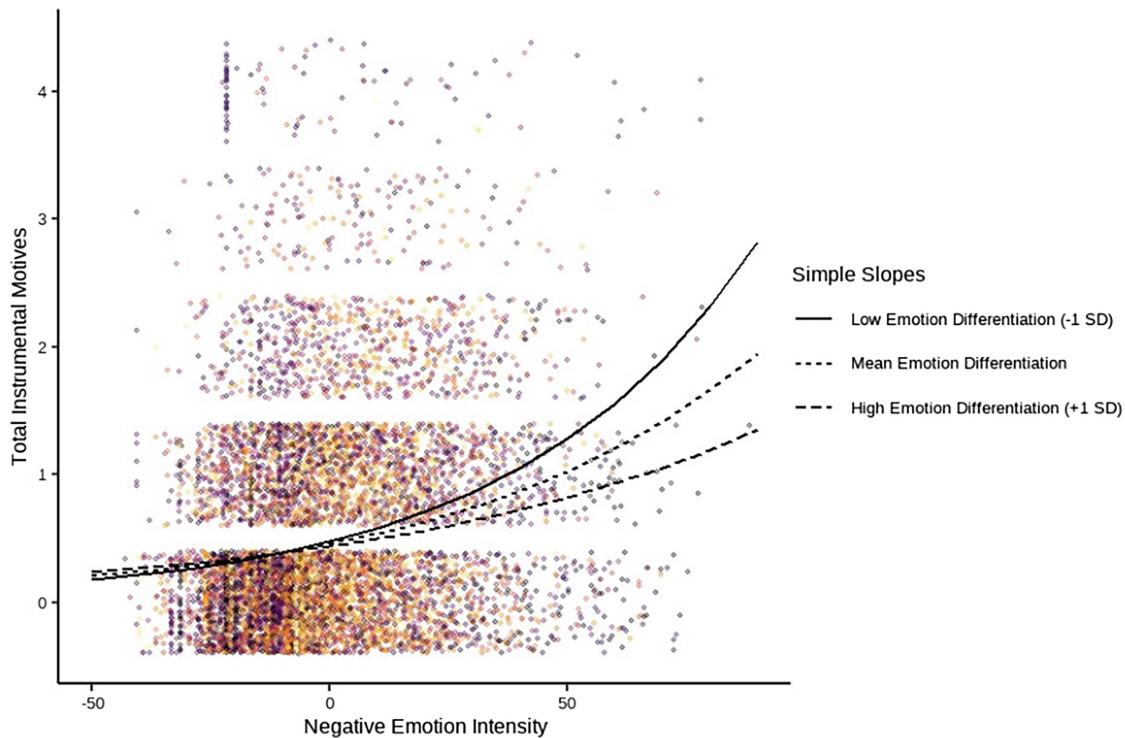
Study 2: Simple Slopes Results for Momentary Emotion Differentiation Predicting Total Motive Use

Predictor	Total motive		
	Estimate (95% CI)	<i>z</i> value	<i>p</i>
Low (-1 <i>SD</i>) momentary negative emotion differentiation	0.02 [0.02, 0.02]	9.51	<.001
Average momentary negative emotion differentiation	0.02 [0.01, 0.02]	10.87	<.001
High (+1 <i>SD</i>) momentary negative emotion differentiation	0.01 [0.01, 0.02]	5.97	<.001

Note. Statistically significant *p* values (<.05) are in bold. CI = confidence interval.

Figure 3

Study 2: Instrumental Motives Predicted by Emotion Intensity for Each Level of Momentary Emotion Differentiation



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

and momentary emotion differentiation underscore the value of investigating momentary emotion differentiation alongside trait emotion differentiation; a direction we believe is a fruitful avenue for future research.

In all, this work contributes to a growing literature by highlighting that differentiating negative emotions may be beneficial in helping people channel their emotions in contextually useful ways. We have shown that trait emotion differentiation plays a role in helping people decide when to put negative emotions to use—namely, more so when negative emotions are more intense. This work also shows *how* people may choose to put their emotions to use. Where previous work predominantly focuses on how emotion differentiation helps people regulate or change emotions, we found that emotion differentiation may help people in aiming to attain a range of instrumental goals (i.e., in performance, social, eudaimonic, and epistemic domains). This link may help to clarify why emotion differentiation is associated with a wide range of psychological health and well-being benefits. Accordingly, we join other research (Liao et al., 2025) in suggesting emotion differentiation may help people direct emotions toward achieving contextually relevant and useful goals.

Our findings with trait emotion differentiation have implications for psychoeducation. Our findings suggest that context-sensitive pursuit of goals may go alongside markers of psychological health like emotion differentiation. This finding is echoed by other research showing that individuals prone to and suffering from depression show less contextually relevant emotion goals (Hu et al., 2024).

Future research could investigate this link and test whether instrumental motive education and emotion differentiation training may improve context-relevant emotion regulation.

Strengths, Limitations, and Future Directions

One strength of this research is the conceptual replication of our findings across two studies. Our studies measured emotion regulation motives measured both prospectively (Study 1) and retrospectively (Study 2). Despite these methodological differences, we consistently found that trait emotion differentiation moderated the relationship between momentary emotion intensity and instrumental regulation motives. However, there are also some limitations to consider.

To begin, the emotions we tested may not adequately align with the motives. The emotions were chosen to represent each of the four arousal–valence quadrants (high arousal positive valence, high arousal negative valence, low arousal positive valence, low arousal negative valence, Posner et al., 2005) and were limited to one emotion per quadrant to reduce survey burden. Including a wider range of emotions or perhaps more personally relevant (idiographic) emotions (Koval et al., 2020) could help refine our understanding of emotion differentiation.

In addition, this research is correlational and does not measure the mechanisms linking emotion differentiation and motive endorsement. This leaves open three alternate explanations. First, it is possible that the causal order of the variables is flipped, such that

holding instrumental motives helps people to learn to better differentiate their emotions over time. We focused on differentiation predicting motives because people higher in trait emotion differentiation are thought to have greater emotion knowledge (Kashdan et al., 2015), which means they may be better able to identify the potential instrumental value of each emotion. However, these processes are likely to be complex and multidirectional, and to truly disentangle how they unfold, both more fine-grained temporal data and experimental designs are needed.

Second, the relationship between emotion differentiation and instrumental motives may be propelled by a third variable, such as cognitive processes like attention (Thompson et al., 2018) and memory—including short-term emotion knowledge and long-term emotion experiences—which may increase both instrumental motive endorsement and emotion differentiation. In line with this idea, some research has found that stress, which reduces cognitive resources, is linked with subsequent decreases in emotion differentiation (Erbas et al., 2018). However, running counter to this idea, these findings were not moderated by working memory (Erbas et al., 2018), and more recently, other research found no direct link between executive function and emotion differentiation (Schmitt et al., 2025).

Finally, it is possible that our results reflect that high trait differentiators endorse more instrumental motives because they have an increased capacity to label their motives, rather than actually holding these motives more. To rule out this explanation, future research could randomly assign people to receive training on labeling their motives (or not) to see whether the association between differentiation and motive endorsement is attenuated in the labeling group.

Constraints on Generality

The present research was conducted across two cultural contexts: Australia and Belgium, in their respective native languages, English and Dutch, and each included samples with a mix of cultures. However, we acknowledge that most participants in Study 1 identified as White or Caucasian (49%). Study 2 only collected data on nationality, all of which were European, but still, there may be large cultural differences between different European nationalities. This means the relationships we observe may not generalize to languages and cultures beyond Western countries and primarily White participants. Future research would benefit from investigating these phenomena in broader cultures, given that research demonstrates culture shapes the ways in which people use their emotions (e.g., Ma et al., 2018). Even between these two studies, there are differences in, for example, instrumental motive prevalence (see Table 1): The Australian sample (Study 1) reported more instrumental motives than the Belgium sample (Study 2). Future research could benefit from comparing emotion differentiation and instrumental motive endorsement across cultures, contributing to and building on the already extant literature on culture and emotions (for a review, see Ford & Mauss, 2015).

Conclusion

In two studies, we tested whether emotion differentiation helps people find utility in their emotions under intense circumstances.

Our findings show that those who are better able to differentiate their emotions are more likely to channel more intense (compared to less intense) negative emotions toward instrumental goals. This suggests that for negative emotions, it pays to be precise; at least if people want to use intense emotions in instrumental ways.

References

- Barrett, L. F. (2017). The theory of constructed emotion: An active inference account of interoception and categorization. *Social Cognitive and Affective Neuroscience*, 12(11), Article 1833. <https://doi.org/10.1093/scan/nsx060>
- Barrett, L. F., Gross, J., Christensen, T. C., & Benvenuto, M. (2001). Knowing what you're feeling and knowing what to do about it: Mapping the relation between emotion differentiation and emotion regulation. *Cognition and Emotion*, 15(6), 713–724. <https://doi.org/10.1080/02699930143000239>
- Bates, D., Maechler, M., Bolker, B., Walker, S., Christensen, R. H. B., Singmann, H., Dai, B., Scheipl, F., Grothendieck, G., Green, P., Fox, J., Bauer, A., & Krivitsky, P. N. (2009). *Package 'lme4'*. <https://lme4.r-forge.r-project.org>
- Blanke, E. S., Bellentier, J. A., Riediger, M., & Brose, A. (2022). When and how to regulate: Everyday emotion-regulation strategy use and stressor intensity. *Affective Science*, 3(1), 81–92. <https://doi.org/10.1007/s42761-021-00087-1>
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, 54(1), 579–616. <https://doi.org/10.1146/annurev.psych.54.101601.145030>
- Brans, K., Koval, P., Verduyn, P., Lim, Y. L., & Kuppens, P. (2013). The regulation of negative and positive affect in daily life. *Emotion*, 13(5), 926–939. <https://doi.org/10.1037/a0032400>
- Christensen, T. C., Barrett, L. F., Bliss-Moreau, E., Lebo, K., & Kaschub, C. (2003). A practical guide to experience-sampling procedures. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 4(1), 53–78. <https://doi.org/10.1023/A:1023609306024>
- Dejonckheere, E., Kalokerinos, E. K., Bastian, B., & Kuppens, P. (2019). Poor emotion regulation ability mediates the link between depressive symptoms and affective bipolarity. *Cognition and Emotion*, 33(5), 1076–1083. <https://doi.org/10.1080/026999931.2018.1524747>
- Eldesouky, L., & English, T. (2019). Regulating for a reason: Emotion regulation goals are linked to spontaneous strategy use. *Journal of Personality*, 87(5), 948–961. <https://doi.org/10.1111/jopy.12447>
- Erbas, Y., Ceulemans, E., Kalokerinos, E. K., Houben, M., Koval, P., Pe, M. L., & Kuppens, P. (2018). Why I don't always know what I'm feeling: The role of stress in within-person fluctuations in emotion differentiation. *Journal of Personality and Social Psychology*, 115(2), 179–191. <https://doi.org/10.1037/pspa0000126>
- Erbas, Y., Kalokerinos, E. K., Kuppens, P., van Halem, S., & Ceulemans, E. (2021). Momentary emotion differentiation: The derivation and validation of an index to study within-person fluctuations in emotion differentiation. *Assessment*, 29(4), 700–716. <https://doi.org/10.1177/1073191121990089> (Original work published 2022)
- Erbas, Y., Sels, L., Ceulemans, E., & Kuppens, P. (2016). Feeling me, feeling you: The relation between emotion differentiation and empathic accuracy. *Social Psychological and Personality Science*, 7(3), 240–247. <https://doi.org/10.1177/1948550616633504>
- Erber, R., & Erber, M. W. (1994). Beyond mood and social judgment: Mood incongruent recall and mood regulation. *European Journal of Social Psychology*, 24(1), 79–88. <https://doi.org/10.1002/ejsp.2420240106>
- Ford, B. Q., & Mauss, I. B. (2015). Culture and emotion regulation. *Current Opinion in Psychology*, 3, 1–5. <https://doi.org/10.1016/j.copsyc.2014.12.004>

- Geeraerts, J., & Kuppens, P. (2020). Investigating careless responding detection techniques in experience sampling methods (ESM). *KU Leuven*, 18.
- Giraudeau, B. (1996). Negative values of the intraclass correlation coefficient are not theoretically possible. *Journal of Clinical Epidemiology*, 49(10), 1205–1206. [https://doi.org/10.1016/0895-4356\(96\)00053-4](https://doi.org/10.1016/0895-4356(96)00053-4)
- Gohm, C. L. (2003). Mood regulation and emotional intelligence: Individual differences. *Journal of Personality and Social Psychology*, 84(3), 594–607. <https://doi.org/10.1037/0022-3514.84.3.594>
- Hackenbracht, J., & Tamir, M. (2010). Preferences for sadness when eliciting help: Instrumental motives in sadness regulation. *Motivation and Emotion*, 34(3), 306–315. <https://doi.org/10.1007/s11031-010-9180-y>
- Hu, D., Mizrahi Lakan, S., Kalokerinos, E. K., & Tamir, M. (2024). Stuck with the foot on the pedal: Depression and motivated emotion regulation in daily life. *Emotion*, 24(5), 1299–1311. <https://doi.org/10.1037/emo0001351>
- Kalokerinos, E. K., Erbas, Y., Ceulemans, E., & Kuppens, P. (2019). Differentiate to regulate: Low negative emotion differentiation is associated with ineffective use but not selection of emotion-regulation strategies. *Psychological Science*, 30(6), 863–879. <https://doi.org/10.1177/0956797619838763>
- Kalokerinos, E. K., & Koval, P. (2024). Emotion regulation flexibility. In J. J. Gross & B. Q. Ford (Eds.), *Handbook of emotion regulation* (3rd ed., pp. 265–273). Guilford Press.
- Kalokerinos, E. K., Murphy, S. C., Koval, P., Bailen, N. H., Crombez, G., Hollenstein, T., Gleeson, J., Thompson, R. J., Van Ryckeghem, D. M. L., Kuppens, P., & Bastian, B. (2020). Neuroticism may not reflect emotional variability. *Proceedings of the National Academy of Sciences of the United States of America*, 117(17), 9270–9276. <https://doi.org/10.1073/pnas.1919934117>
- Kalokerinos, E. K., Tamir, M., & Kuppens, P. (2017). Instrumental motives in negative emotion regulation in daily life: Frequency, consistency, and predictors. *Emotion*, 17(4), 648–657. <https://doi.org/10.1037/emo0000269>
- Kashdan, T. B., Barrett, L. F., & McKnight, P. E. (2015). Unpacking emotion differentiation: Transforming unpleasant experience by perceiving distinctions in negativity. *Current Directions in Psychological Science*, 24(1), 10–16. <https://doi.org/10.1177/0963721414550708>
- Kashdan, T. B., Ferrisizidis, P., Collins, R. L., & Muraven, M. (2010). Emotion differentiation as resilience against excessive alcohol use: An ecological momentary assessment in underage social drinkers. *Psychological Science*, 21(9), 1341–1347. <https://doi.org/10.1177/09567977610379863>
- Kircanski, K., Lieberman, M. D., & Craske, M. G. (2012). Feelings into words: Contributions of language to exposure therapy. *Psychological Science*, 23(10), 1086–1091. <https://doi.org/10.1177/0956797612443830>
- Koval, P., Kalokerinos, E. K., Verduyn, P., & Greiff, S. (2020). Capturing the dynamics of emotion and emotion regulation in daily life with ambulatory assessment. *European Journal of Psychological Assessment*, 36(3), 433–436. <https://doi.org/10.1027/1015-5759/a000599>
- Lane, A. M., Beedie, C. J., Davenport, T. J., & Stanley, D. M. (2011). Instrumental emotion regulation in sport: Relationships between beliefs about emotion and emotion regulation strategies used by athletes. *Scandinavian Journal of Medicine & Science in Sports*, 21(6), 445–451. <https://doi.org/10.1111/j.1600-0838.2011.01364.x>
- Li, Y., & Ashkanasy, N. M. (2019). Risk adaptation and emotion differentiation: An experimental study of dynamic decision-making. *Asia Pacific Journal of Management*, 36(1), 219–243. <https://doi.org/10.1007/s10490-017-9559-3>
- Liao, L., Zhang, K., Zhou, Y., & Liu, J. (2025). The association between negative emotion differentiation and emotion regulation flexibility in daily life. *Cognition and Emotion*, 39(3), 590–602. <https://doi.org/10.1080/02699931.2024.2381079>
- Liu, D. Y., Gilbert, K. E., & Thompson, R. J. (2020). Emotion differentiation moderates the effects of rumination on depression: A longitudinal study. *Emotion*, 20(7), 1234–1243. <https://doi.org/10.1037/emo0000627>
- Ma, X., Tamir, M., & Miyamoto, Y. (2018). A socio-cultural instrumental approach to emotion regulation: Culture and the regulation of positive emotions. *Emotion*, 18(1), 138–152. <https://doi.org/10.1037/emo0000315>
- Meers, K., Dejonckheere, E., Kalokerinos, E. K., Rummens, K., & Kuppens, P. (2020). mobileQ: A free user-friendly application for collecting experience sampling data. *Behavior Research Methods*, 52(4), 1510–1515. <https://doi.org/10.3758/s13428-019-01330-1>
- Moeck, E. K., Freeman-Robinson, R., O'Brien, S. T., Woods, J. H., Grewal, K. K., Kostopoulos, J., Bagnara, L., Saling, Y. J., Greenaway, K. H., Koval, P., & Kalokerinos, E. K. (2023). Everyday emotional functioning in COVID-19 lockdowns. *Emotion*, 23(8), 2219–2230. <https://doi.org/10.1037/emo0001226>
- Murayama, K., Usami, S., & Sakaki, M. (2022). Summary-statistics-based power analysis: A new and practical method to determine sample size for mixed-effects modeling. *Psychological Methods*, 27(6), 1014–1038. <https://doi.org/10.1037/met0000330>
- Murphy, S. C. (2020). *Package 'emodiff'*. <https://github.com/seanchrismurphy/emodiff>
- Niles, A. N., Craske, M. G., Lieberman, M. D., & Hur, C. (2015). Affect labeling enhances exposure effectiveness for public speaking anxiety. *Behaviour Research and Therapy*, 68, 27–36. <https://doi.org/10.1016/j.brat.2015.03.004>
- O'Brien, S. T., Dozo, N., Hinton, J. D. X., Moeck, E. K., Susanto, R., Jayaputera, G. T., Sinnott, R. O., Vu, D., Alvarez-Jimenez, M., Gleeson, J., & Koval, P. (2024). SEMA³: A free smartphone platform for daily life surveys. *Behavior Research Methods*, 56(7), 7691–7706. <https://doi.org/10.3758/s13428-024-02445-w>
- Oishi, S., & Westgate, E. C. (2022). A psychologically rich life: Beyond happiness and meaning. *Psychological Review*, 129(4), 790–811. <https://doi.org/10.1037/rev0000317>
- Oliver, M. B., & Raney, A. A. (2011). Entertainment as pleasurable and meaningful: Identifying hedonic and eudaimonic motivations for entertainment consumption. *Journal of Communication*, 61(5), 984–1004. <https://doi.org/10.1111/j.1460-2466.2011.01585.x>
- Posner, J., Russell, J. A., & Peterson, B. S. (2005). The circumplex model of affect: An integrative approach to affective neuroscience, cognitive development, and psychopathology. *Development and Psychopathology*, 17(3), 715–734. <https://doi.org/10.1017/S0954579405050340>
- Schmitt, M. C., Karbach, J., Könen, T., Basten, U., Glombiewski, J. A., In-Albon, T., & Lischetzke, T. (2025). Executive functions and emotional granularity: No evidence for positive associations. *Affective Science*. Advance online publication. <https://doi.org/10.1007/s42761-025-00307-y>
- Schwarz, N. (2012). Feelings-as-information theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 289–308). Sage Publications. <https://doi.org/10.4135/9781446249215.n15>
- Seah, T. H. S., & Coifman, K. G. (2022). Emotion differentiation and behavioral dysregulation in clinical and nonclinical samples: A meta-analysis. *Emotion*, 22(7), 1686–1697. <https://doi.org/10.1037/emo0000968>
- Sels, L., Erbas, Y., O'Brien, S. T., Verhofstadt, L., Clark, M. S., & Kalokerinos, E. K. (2024). The double-edged sword of social sharing: Social sharing predicts increased emotion differentiation when rumination is low but decreased emotion differentiation when rumination is high. *Psychological Science*, 35(10), 1079–1093. <https://doi.org/10.1177/09567976241266513> (Original work published 2024)
- Sheppes, G. (2020). Transcending the “good & bad” and “here & now” in emotion regulation: Costs and benefits of strategies across regulatory stages. In B. Gawronski (Ed.), *Advances in experimental social psychology*

- (Vol. 61, pp. 185–236). Elsevier. <https://doi.org/10.1016/bs.aesp.2019.09.003>
- Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, *86*(2), 420–428. <https://doi.org/10.1037/0033-2909.86.2.420>
- Smidt, K. E., & Suvak, M. K. (2015). A brief, but nuanced, review of emotional granularity and emotion differentiation research. *Current Opinion in Psychology*, *3*, 48–51. <https://doi.org/10.1016/j.copsyc.2015.02.007>
- Tamir, M. (2016). Why do people regulate their emotions? A taxonomy of motives in emotion regulation. *Personality and Social Psychology Review*, *20*(3), 199–222. <https://doi.org/10.1177/1088868315586325>
- Thompson, R. J., Springstein, T., & Boden, M. (2021). Gaining clarity about emotion differentiation. *Social and Personality Psychology Compass*, *15*(3), Article e12584. <https://doi.org/10.1111/spc3.12584>
- Torre, J. B., & Lieberman, M. D. (2018). Putting feelings into words: Affect labeling as implicit emotion regulation. *Emotion Review*, *10*(2), 116–124. <https://doi.org/10.1177/1754073917742706>

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