Article

Choosing to Regulate Emotions: Pursuing Emotion Goals in Autonomy-Supportive and Controlling Contexts

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Abstract

We applied self-determination theory to emotion regulation and tested the potential effects of autonomy-supportive and controlling contexts on the pursuit of emotion goals. In four experimental studies ($N = 242$), participants viewed a fear-eliciting film clip or emotion-eliciting pictures and were prompted to pursue emotion goals with either autonomy-supportive or controlling instructions. Participants in both conditions were equally likely to engage in emotion regulation when directly instructed to do so. However, when they were allowed to spontaneously choose whether to regulate emotions or not, participants in the autonomy-supportive contexts were more likely than those in the controlling ones to independently pursue emotion goals. The latter also engaged in more defensive processing of emotion-eliciting stimuli than the former. These results indicate that people are more likely to pursue emotion goals of their own accord when the context in which they pursue them is autonomy supportive, rather than controlling.

Keywords

emotion regulation, emotion goals, autonomy support, defensiveness

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People often want others around them to regulate their emotions: Parents want a fearful child to calm down on the first day of school; a spouse wants her sad husband to cheer up after a rough day at work; a teacher wants quarreling pupils to relax and stop fighting. To lead another to regulate his emotions, some may try to force him to do so ("Calm down, I'm telling you!"), whereas others support independent choice and acknowledge his unique perspective ("I understand you are mad right now, but perhaps you would feel better if you tried to calm down"). We argue that these different forms of motivating emotion regulation could have divergent implications for individuals' tendency to continue pursuing emotion regulation of their own accord.

Our research is anchored in self-determination theory (SDT; Ryan & Deci, 2017). In this theory, the former types of instructions are considered controlling and might lead an individual to feel pressured to act in a certain way, whereas the latter are autonomy supportive and might lead her to develop a sense of choice and volition. SDT further proposes that autonomy-supportive contexts promote more adaptive goal pursuits than controlling ones, pursuits that persist over time, even in the absence of direct instructions to engage in them. In this investigation, we applied these ideas to the pursuit of emotion goals (for a review, see Tamir & Millgram, 2017).

Motivated Emotion Regulation

Emotion regulation refers to the set of automatic and controlled processes involved in the initiation, maintenance, and modification of the occurrence, intensity, and duration of feeling states (Gross & Thompson, 2007). Much research on emotion regulation has focused on how individuals regulate their emotions, exploring both adaptive and maladaptive strategies (for a review, see Koole, 2009). However, emotion regulation research should extend beyond enumerating emotion regulation strategies to include contextual and motivational variables influencing them (Aldao, 2013; Mauss & Tamir, 2014). Accordingly, researchers have begun to explore why people regulate emotions and what their emotion goals are (Tamir, 2016; Tamir & Millgram, 2017).

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Emotion goals are defined as representations of desired emotion states (Mauss & Tamir, 2014; Tamir, 2016). As such, they set the direction in which people regulate their emotions (Tamir, 2016; Tamir & Millgram, 2017). The mere activation of an emotion goal can trigger regulatory processes, shifting emotions in the desired direction (Tamir, Halperin, Porat, Bigman, & Hasson, 2019).

The study of emotion goals has focused almost exclusively on the content of such goals (i.e., the emotion states individuals try to achieve). However, certain goals can be more adaptive than others because of the motivational processes accompanying their pursuit. For example, Tamir, Bigman, Rhodes, Salerno, and Schreier (2015) used an expectancy-value model of motivation (e.g., Atkinson, 1957) to demonstrate that the expected usefulness of an emotion in a given situation influences individuals' pursuit of that emotion and emotion-consistent behavior. We extended such research and applied SDT (Ryan & Deci, 2017) to the study of motivated emotion regulation.

Internalization of Goals: An SDT Perspective

SDT is a motivational framework that highlights internalization, defined as the process of taking in values, beliefs, or behavioral regulation from external sources and transforming them into one's own (Ryan, Connell, & Deci, 1985). The theory differentiates between autonomous motivation, in which individuals volitionally endorse their behaviors, thoughts, and emotions, and controlled motivation, in which individuals perceive their behaviors as stemming from external sources and feel coerced to behave, think, and feel in certain ways. According to SDT, goal pursuit via autonomous motivation allows individuals to exert more effort, experience less conflict, and feel a greater sense of readiness to attain their goals. In contrast, goal pursuit via controlled motivation is often rigid and inflexible (for a review, see Koestner, 2008).

SDT also focuses on socializing contexts that facilitate or undermine the internalization of values, norms, and goals. Autonomy-supportive contexts facilitate their internalization and are characterized by several socialization practices: taking the target individual's perspective, acting in ways that encourage choice and self-initiation, and providing meaningful rationales (Deci, Eghrari, Patrick, & Leone, 1994). In contrast, controlling contexts undermine internalization and are characterized by the use of rewards, deadlines, threats, and pressuring language (Deci et al., 1994).

In several experimental studies, participants were instructed to pursue goals in autonomy-supportive and controlling contexts. Autonomy-supportive (vs. controlling) contexts gave rise to goal pursuits characterized by a sense of choice, interest, enjoyment, less tension, and more free-time engagement in goal-related tasks (Benita, Roth, & Deci, 2014; Deci et al., 1994; Joussemet, Koestner, Lekes, & Houlfort, 2004). Autonomy-supportive (vs. controlling) contexts also predicted better goal attainment and self-regulatory processes (Benita, Shane, Elgali, & Roth, 2017; Muraven, Gagné, & Rosman, 2008; Williams et al., 2002).

Thus, autonomy-supportive contexts are likely to lead people to persist in goal pursuit over time, even in the absence of immediate supervision. However, in a controlling context, goals are perceived as less personal, linked to reduced motivation, and less likely to persist over time, especially in the absence of direct supervision. Our research applied these findings to the pursuit of emotion goals.

Autonomy-Supportive and Controlling Contexts and Emotion Regulation

To date, few studies have explored the differential effects of autonomy-supportive and controlling social contexts on emotion regulation outcomes. Roth, Assor, Niemiec, Ryan, and Deci (2009) found parental autonomy support for adolescents' emotional expression was linked to adolescents' autonomous motivation to express and experience emotions and to use adaptive emotion regulation strategies. Controlling parenting predicted controlled motivation and maladaptive strategies. Similarly, Brenning, Soenens, Van Petegem, and Vansteenkiste (2015) found parental autonomy support predicted children's use of adaptive emotion-regulation strategies. However, these correlational studies focused on adolescents' perceptions of their parents' autonomy-supportive and controlling practices in general, not the manner in which parents set emotion goals. Nor did they explore children's emotion goal pursuit as an outcome measure.

Given the recent interest in motivated emotion regulation (Tamir & Millgram, 2017) and the major role autonomy-supportive and controlling contexts play in explaining motivated behavior (Ryan & Deci, 2017), we suggest the need to assess whether autonomy-supportive and controlling contexts differentially affect the pursuit and attainment of emotion goals.

The Investigation

In four experiments, we instructed participants to pursue emotion goals in autonomy-supportive or controlling contexts. The instructions were similar to previous studies probing autonomy-supportive or controlling contexts (e.g., Benita et al., 2014; Deci et al., 1994). We presented participants with emotional stimuli and instructed them to regulate their emotions. Because controlled motivation is often a powerful motivator, linked with obedience to authority (e.g., Joussemet et al., 2004), we expected that immediately following the instructions, participants instructed to regulate emotions in a controlling context would be equally likely to pursue emotion goals as participants in the autonomy-supportive context.

After the initial exposure to the emotional stimulus, we presented participants with another emotional stimulus, this time allowing them to freely select whether to engage in emotion regulation or not. This enabled us to test whether autonomy-supportive versus controlling contexts would differentially shape emotion goal pursuit over time. We expected autonomy-supportive contexts to be more likely than controlling ones to propel participants to persist in their pursuit of emotion goals.

Study 1

Participants were exposed to a fear-eliciting video clip and instructed to decrease their fear. To create autonomy-supportive and controlling contexts, we designed instructions to reflect either the support or control of participants' autonomy, respectively. In a separate condition (no-goal condition), participants were asked to watch the film carefully but were not asked to regulate their emotions. Following the film, participants rated their experience of fear. Motivated accounts of emotion regulation (e.g., Tamir & Millgram, 2017) suggest emotion regulatory processes are triggered by the activation of a goal to regulate emotions. Therefore, when people are instructed to decrease their reactions to a fearful stimulus, feeling less fear reflects greater effort in emotion goal pursuit.

Participants were then exposed to a second film. This time, they could choose whether to regulate their emotions. We hypothesized that during the first film, participants in the controlling condition would try to decrease their negative emotions to the same extent as those in the autonomy-supportive condition; both would experience lower levels of emotional intensity than participants in the no-goal condition. Because the second film was different, we expected that overall, when participants were not directly instructed to regulate emotions, they would show higher emotional intensity during the second exposure. However, because we expected participants in the autonomy-supportive (vs. controlling) condition to be more likely to persist in pursuing the emotion goal, we expected an interaction between conditions and exposure time. Specifically, we expected participants in the controlling condition would experience a greater increase in fear in the second exposure, relative to the first, than those in the autonomy-supportive condition.

Method

Participants. All studies were approved by the university's ethical review board. Participants were 90 Israeli undergraduates (58% female, M_{age} = 24.91 years), who received payment for participation. Previous research exploring the effect of autonomy-supportive versus controlling contexts on motivational outcomes typically found effect sizes of $\eta^2 > .06$ (e.g., Hooyman, Wulf, & Lewthwaite, 2014; Mabbe, Soenens, De Muynck, & Vansteenkiste, 2018). Power analysis using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) showed that the smallest sample in our studies (N = 88) would give us a 99% chance of detecting an effect size of $\eta^2 > .06$ as significant at the 5% level.

Procedure. The study was conducted in the laboratory. Participants were told it tested their ability to cope with emotional films by practicing methods to decrease emotional arousal. They were randomly assigned to one of the three experimental conditions (autonomy supportive, controlling, no-goal). In the autonomy-supportive condition, instructions included several practices documented as autonomy supportive: (a) acknowledging difficulties, (b) providing a rationale, (c) using noncontrolling language (Benita et al., 2014; Deci et al., 1994). In the controlling condition, instructions included controlling language, for example, verbs such as "should" and "have to" (Benita et al., 2014; Deci et al., 1994). A translation of the instructions is in the supplemental material.

The first film was a scene from *American History X*, in which a neo-Nazi kills an African American. The second was a scene from *Misery*, in which a woman ties a man to a bed and breaks his legs. These clips have been previously validated as eliciting fear (Schaefer, Nils, Sanchez, & Philippot, 2010). Following exposure to the films, participants reported on their emotional intensity. Before the second film, participants in the autonomy-supportive and controlling conditions were given identical instructions to choose whether to regulate emotions or not. Participants in the no-goal condition were given the same instructions as in the first exposure (watch the film and respond naturally). After the second film, participants reported emotional intensity, completed manipulation checks, and provided demographic details.

Materials

Manipulation checks

Autonomous motivation to regulate emotions. This three-item scale was based on the Self-Regulation Questionnaire (SRQ; Ryan & Connell, 1989). Items assessed the extent to which participants' motivation was autonomous (e.g., "I tried to regulate emotions because it was important for me to do so," α = .77). Participants responded on a Likert-type scale, ranging from *not at all* (1) to *very much* (7).

Perceptions of autonomy support and control. The six-item Experimental Climate Scale (ECS; Benita et al., 2014) assessed the degree to which participants perceived the experimenter as autonomy supportive versus controlling (e.g., "I felt understood by the experimenter," α = .85). Participants responded on a Likert-type scale, ranging from *not at all* (1) to *very much* (7).

Self-reported emotional experience. Participants rated a 14-item set of positive and negative emotions, based on Gross and Levenson's (1993) measure. The target emotion (*fear)* was embedded in a list of emotions (amusement, embarrass-

Table 1. Study 1: Descriptive Statistics for Manipulation Checks and Dependent Variables.

	Experimental condition		
	Autonomy support ($n = 30$)	Controlling ($n = 30$)	No-goal ($n = 30$)
Manipulation checks	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Autonomous motivation	5.11^{a} (1.13)	4.47^{b} (1.12)	3.47^{c} (1.48)
Autonomy support	5.95^{a} (0.63)	5.07^{b} (1.23)	6.19^{a} (0.79)
Dependent variables			
Experienced fear Film 1	3.13 (1.59)	2.27 (1.57)	4.57 (2.05)
Experienced fear Film 2	3.57 (1.76)	3.43 (1.91)	4.70 (2.35)

Note. For manipulation checks, nonidentical superscripts indicate significant difference at $p < .05$.

ment, anger, surprise, anxiety, sadness, moodiness, happiness, interest, guilt, confusion, interest, bad, good) serving as filler items. Participants rated the extent to which they felt each emotion while viewing the film, ranging from *not at all* (1) to *very much* (7).

Results

Manipulation checks. Table 1 presents descriptive statistics for manipulation check and outcome measures. We conducted one-way ANOVAs, with the means of the autonomous motivation and ECS scales as dependent variables. Significant effects emerged for autonomous motivation, $F(2, 87) = 12.27$, $p < .001$, $\eta^2 = .22$, and autonomy support, $F(2, 87) = 13.08$, $p < .001$, $\eta^2 = .23$. Participants in the autonomy-supportive condition perceived the experimenter as more autonomy supportive than did participants in the controlling condition, but no more than participants in the no-goal condition. They also reported the highest levels of autonomous motivation to regulate emotions. Thus, the manipulation yielded differentiated levels of autonomous and controlled emotion goal pursuit.

Main analysis

Self-reported emotional experience. Repeated-measures ANOVA with experienced fear in the first and second films as a within-subject variable revealed a significant interaction between group and within-subject factor, $F(2, 87) = 3.90$, $p < .024$, $\eta^2 = .08$. Figure 1 presents the interaction effect. Simple effects analysis indicated that participants in the controlling condition experienced more fear in response to the second film, relative to the first film, $F(1, 87) = 18.80$, $p < .001$, $\eta^2 = .18$. No differences in emotional reactions were evident in the autonomy-supportive condition, $F(1, 87) = 2.59$, $p < .111$, $\eta^2 = .03$, or the no-goal condition, $F(1, 87) = 0.25$, $p < .622$, $\eta^2 = .01$.

Between-group differences emerged in responses to the first film, $F(2, 87) = 13.20$, $p < .001$, $\eta^2 = .23$. Fisher's least significant difference (LSD) post hoc test revealed that participants in both the controlling and autonomy-supportive conditions experienced less fear than participants in the no-goal condition ($p < .001$ and $p < .002$, respectively). The difference between the autonomy-supportive and controlling conditions did not reach statistical significance, however ($p < .059$). The overall between-group effect in response to the second film was significant, $F(2, 87) = 3.56$, $p < .033$, $\eta^2 = .08$. Fisher's LSD post hoc test found participants in both the controlling and autonomy-supportive conditions experienced less fear than participants in the no-goal condition ($p < .017$ and $p < .033$, respectively). The difference between the autonomy-supportive and controlling conditions was not significant ($p < .799$).

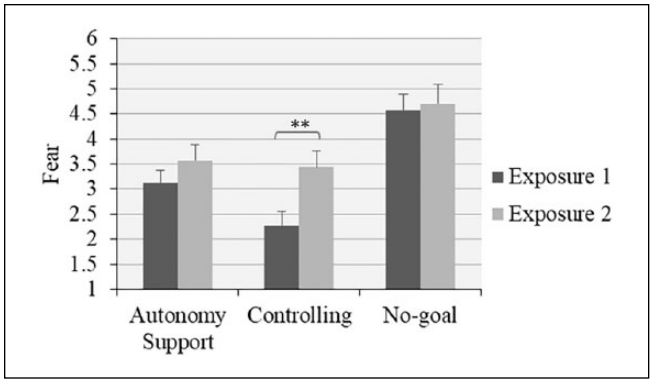

Figure 1. Study 1: Interaction of experimental condition and between-exposure changes in experienced fear.
$^{**}p < .01$.

Discussion

When participants were instructed to regulate their emotions in the first viewing, those in the controlling and autonomy-supportive conditions experienced less fear than those in the no-goal condition. For the second film, when all participants could choose whether or not to regulate their emotions, those in the controlling condition experienced increased fear; those

in the autonomy-supportive condition experienced similar levels. In other words, participants in the latter condition were likely to persist in their regulatory efforts.

The manipulation check indicated no significant differences between the autonomy-supportive and no-goal conditions in perceptions of the experimenter as autonomy supportive. This might stem from our measure of autonomy support, which did not refer specifically to emotion regulation. Participants in the no-goal condition perceived the experimental context as generally autonomy supportive, by default. More relevant to our hypothesis, however, was the perception of autonomy with reference to emotion regulation, and the no-goal condition was largely irrelevant in that respect.

Study 2

In Study 1, we assessed the pursuit of emotion goals by focusing on the back end of the process—the outcome, or the poststimulus emotional experience. The first aim of Study 2 was to assess the front end—the antecedent of the pursuit, or the endorsement of an emotion goal. As in Study 1, we also assessed the outcome, the poststimulus emotional experience.

In Study 1, participants were exposed to two different films, making it difficult to directly compare emotional reactions with these films. In Study 2, therefore, participants were exposed to the same film twice. We expected any reductions in emotional intensity in the no-goal condition would reflect habituation to the film. Because we expected participants in the autonomy-supportive (vs. controlling) condition to be more likely to persist in pursuing the emotion goal, we further hypothesized an interaction between conditions and exposure time. Specifically, compared with participants in the controlling condition, we expected participants in the autonomy-supportive condition to experience a greater decrease in fear at the second exposure, relative to the first. We expected this decrease to have an effect beyond habituation and, therefore, to be greater than the decrease that might be observed in the no-goal condition.

Method

Participants. Participants were 91 Israeli undergraduates (93% female, M_{age} = 25.02 years), who received course credit for participation.

Procedure. The procedure was similar to Study 1, with several exceptions. Participants watched the same film (i.e., the scene from *Misery*; Schaefer et al., 2010) twice. Participants reported on their emotional intensity and on their motivation to regulate emotions.

Materials. Study 2 used the same self-report measures as Study 1.

Emotion goal pursuit. One item assessed participants' endorsement of emotion goals ("While watching the film, my goal was to decrease my negative emotions"). Participants responded on a Likert-type scale ranging from *not at all* (1) to *very much* (7).

Results

Manipulation checks. Table 2 presents descriptive statistics for the manipulation checks and outcome measures. Overall, the manipulation checks confirmed the manipulation was successful. A significant main effect emerged for autonomous motivation, $F(2, 88) = 3.69$, $p < .029$, $\eta^2 = .08$, and the ECS scales, $F(2, 88) = 16.25$, $p < .001$, $\eta^2 = .26$. Compared with participants in other conditions, participants in the autonomy-supportive condition experienced the strongest autonomous motivation and perceived the experimenter as more autonomy supportive. Unlike Study 1, the differences between the no-goal and the controlling conditions were nonsignificant in both scales, and the difference between the autonomy-supportive and the no-goal conditions was significant.

Main analysis

Emotion goal pursuit. To examine differences between conditions in emotion goal pursuit in reactions to the first and second films, we conducted a repeated-measures ANOVA, predicting endorsement of the emotion goal per film (first vs. second) as a within-subject variable. As expected, a significant Condition × Film interaction emerged, $F(2, 88) = 6.24$, $p < .003$, $\eta^2 = .12$. Figure 2 (upper panel) presents the interaction effect. Tests of simple effects showed participants in the controlling condition were less motivated to decrease their negative emotions when viewing the second film, relative to the first, $F(1, 88) = 29.94$, $p < .001$, $\eta^2 = .12$. No such differences were observed in the autonomy-supportive condition, $F(1, 88) = 2.69$, $p < .104$, $\eta^2 = .03$, or the no-goal condition, $F(1, 88) = 0.91$, $p < .343$, $\eta^2 = .01$.

Significant differences emerged between conditions in response to the first film, $F(1, 88) = 13.73$, $p < .001$, $\eta^2 = .24$. Fisher's LSD post hoc test revealed that when viewing the first film, participants in the no-goal condition were less motivated to decrease their negative emotions than participants in the autonomy-supportive and controlling conditions ($p < .002$ and $p < .001$, respectively). When viewing the second film, the overall between-group effect was nonsignificant, $F(1, 88) = 2.16$, $p < .12$, $\eta^2 = .05$. However, planned contrasts revealed significant differences between the autonomy-supportive and controlling conditions, $t(88) = 2.06$, $p < .043$. Other differences were nonsignificant.

Emotional intensity. To examine differences between conditions in fear intensity in response to the first and second films, we conducted a repeated-measures ANOVA predicting experienced fear per film (first vs. second) as a within-subject

Table 2. Study 2: Descriptive Statistics for Manipulation Checks and Dependent Variables.

	Experimental condition		
	Autonomy support (n = 29)	Controlling (n = 29)	No goal (n = 33)
Manipulation checks	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Autonomous motivation	5.56[a] (1.19)	4.89[b] (1.61)	4.66[b] (1.22)
Autonomy support	5.91[a] (0.81)	4.72[b] (1.48)	5.14[b] (1.26)
Dependent variables			
Emotion goal Film 1	5.32 (1.02)	5.97 (1.19)	4.36 (1.37)
Emotion goal Film 2	4.57 (2.04)	3.50 (2.15)	3.97 (1.91)
Experienced fear Film 1	3.45 (1.84)	2.52 (1.68)	3.59 (1.97)
Experienced fear Film 2	2.24 (1.55)	2.72 (1.71)	3.06 (1.81)

Note. For manipulation checks, nonidentical superscripts indicate significant difference at $p < .05$.

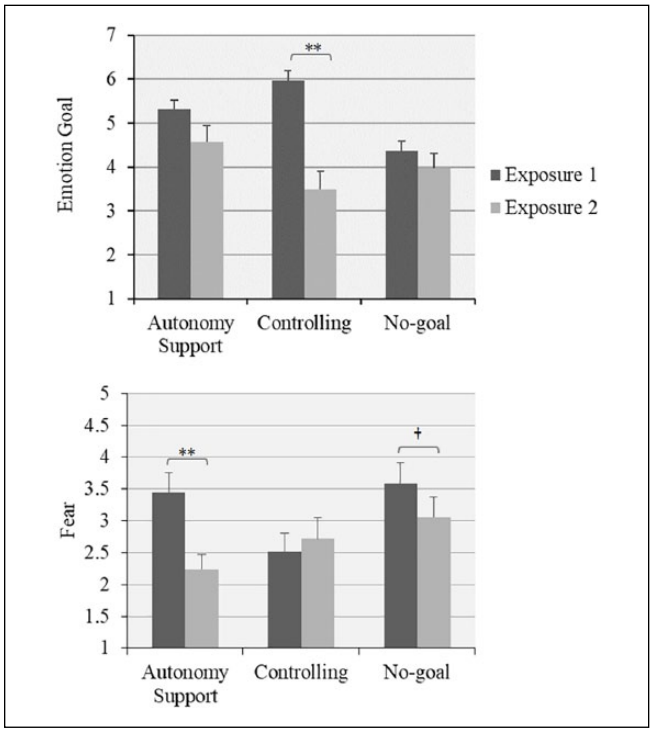

Figure 2. Study 2: Interaction of experimental condition and between-exposure changes in emotion goal pursuit (upper panel) and experienced fear (lower panel).
†$p < .10$. **$p < .01$.

variable. As expected, a significant Condition × Film interaction emerged, $F(2, 87) = 5.70$, $p < .005$, $\eta^2 = .12$. Figure 2 (lower panel) presents the interaction effect. Tests of simple effects demonstrated participants in the autonomy-supportive condition experienced significantly less fear in the second exposure, relative to the first, $F(1, 87) = 16.59$, $p < .001$, $\eta^2 = .16$. Such differences did not appear in the controlling condition, $F(1, 87) = 0.49$, $p < .487$, $\eta^2 = .01$. We also observed a decrease in experienced fear in the no-goal condition, albeit not statistically significant, $F(1, 87) = 3.55$, $p < .063$, $\eta^2 = .04$.

To test our hypothesis that the emotional experience of participants in the autonomy support condition resulted from active emotion regulation, not mere habituation, we compared the autonomy-supportive with the no-goal condition. Contrary to our hypothesis, this interaction approached but did not reach statistical significance, $F(1, 60) = 5.10$, $p < .060$, $\eta^2 = .058$.

Nonsignificant between-group differences emerged in response to the first film, $F(2, 87) = 2.30$, $p < .055$, $\eta^2 = .06$. Planned contrasts revealed that participants in the controlling condition experienced significantly less fear than participants in the no-goal condition, $t(87) = -2.84$, $p < .025$. Other differences were nonsignificant. In response to the second film, the overall between-group effect was nonsignificant, $F(1, 88) = 2.24$, $p < .22$, $\eta^2 = .05$.

Discussion

The results of Study 2 indicated that participants in the autonomy-supportive condition were motivated to continue to regulate their emotions in the second viewing. Contrary to our hypothesis, however, they did not experience greater reductions in emotional intensity than participants in the no-goal condition. These results suggest participants in both the autonomy-supportive and no-goal conditions habituated to the film. Because participants in the former condition also regulated their emotions in the first film, they experienced less fear overall than participants in the latter. Participants in the controlling condition did not show such reductions in emotional intensity, and they reported significant decreases in endorsing the emotion goal in the second viewing. Thus, although they regulated their emotions in the first viewing, unlike those in the autonomy-supportive condition, they did not show a habituation effect in the second.

Overall, these results suggest controlling contexts can be powerful motivators in the short term, but they instigate behavior based on compliance, which is likely to decline in the absence of direct supervision. Although autonomy-supportive contexts are not necessarily as powerful instigators of immediate behavior as controlling ones, they facilitate a deeper internalization of externally set goals, with continued regulation even without explicit directions to do so.

Unlike Study 1, Study 2's manipulation check showed significant differences between autonomy-supportive and no-goal groups in perceptions of the experimenter's autonomy support. Because there was a different experimenter in each study, it is likely that the experimenter in this study was perceived by default as more controlling than the experimenter in Study 1.

Study 3

Study 3 sought to replicate and extend the findings of Study 2. It was identical to Study 2 in most respects. However, in addition to the self-report measures used in Study 2, it assessed participants' defensiveness as another way to determine how they engaged with their emotions. Defensiveness is a motivational construct, defined as the tendency to avoid incorporating personally threatening information (van't Riet & Ruiter, 2013). Defensive responses to emotionally significant material compartmentalize, distort, or minimize emotions to manage overwhelming experiences (Vansteenkiste & Ryan, 2013). Thus, instead of actively coping with emotional events by pursuing emotion goals, defensive individuals are likely to avoid emotional events in the first place. Such avoidance has long been demonstrated as harmful to well-being (Hayes, Strosahl, & Wilson, 1999). Defensiveness reflects a reduced motivation to dwell on emotional content and is thus likely to be affected by motivational variables. Weinstein and Hodgins (2009) found autonomous participants showed less defensive responses to an emotional film than controlled participants, but they did not explore the differential effect of the motivating context (autonomy supportive vs. controlling) on defensiveness. We hypothesized that controlling contexts would reduce the motivation to pursue the emotion goal during the second film viewing; thus, these participants would be more defensive than participants in autonomy-supportive conditions.

To measure defensiveness, we used the written expression method developed by Pennebaker and his colleagues (for a review, see Tausczik & Pennebaker, 2010), also used by Weinstein and Hodgins (2009). In this method, participants are asked to write their thoughts and feelings following an emotional event. Much of the research on defensiveness in written expression considers texts written by liars and truth-tellers. Several word categories have been identified as reflecting deceptive written expression. For example, liars use fewer first-person singular pronouns than truth-tellers (Hancock, Curry, Goorha, & Woodworth, 2007; Newman, Pennebaker, Berry, & Richards, 2003; Toma & Hancock, 2012). Explaining this effect, Newman et al. (2003) suggested that individuals who respond defensively (i.e., self-deceptively) when discussing personal topics tend to distance themselves from their stories and avoid taking responsibility. Hancock and colleagues (Hancock et al., 2007; Toma & Hancock, 2012) demonstrated that deceptive texts are characterized by an increased use of *negation words* (no, not, never), reflecting inhibition and lack of commitment (see Berry, Pennebaker, Mueller, & Hiller, 1997).

Other word categories linked to defensiveness include the use of *verbs*, especially *past-tense* verbs, and *perceptual process* words (see, hear). Bond and Lee (2005) demonstrated that truthful statements are characterized by the increased use of perceptual process words, suggesting visual or tactile information accompanying the memory of an event might signal its truth to the individual. Guastella and Dadds (2006) had similar results, finding increased use of the past tense in less defensive written expression. The past tense is likely to appear in written expression when an event has already been processed (Pasupathi, 2007) and to be linked with adaptive outcomes following emotional events (e.g., Pennebaker, Mayne, & Francis, 1997).

Therefore, we expected that in their written texts, participants in the controlling condition would show patterns of defensiveness similar to those found in deceptive scripts because they would try to disengage from the emotional material. Their texts should include fewer pronouns, perceptual processes, and past-tense words and more negation words than those of participants in the autonomy-supportive condition.

Method

Participants. Participants were 94 Israeli undergraduates (79% female, M_{age} = 25.44 years), who received credit for participation.

Procedure. The procedure was identical to Study 2, with one exception. At the end of the experiment, participants took 7 min to describe in writing their experiences while viewing the film (see supplemental material for the exact instructions).

Materials. Study 3 used the same self-report measures as Study 2.

Defensive and nondefensive written expression. The texts were written in Hebrew, translated to English, and then back translated to Hebrew (for a similar procedure with texts translated from Hebrew, see Roth et al., 2014; Roth et al., 2018). The English translation was analyzed by Linguistic Inquiry and Word Count (LIWC; Tausczik & Pennebaker, 2010), a text-analytic software that counts words or categories of words in text (Pennebaker, 2004). The word categories we

Table 3. Study 3: Descriptive Statistics for Manipulation Checks and Dependent Variables.

	Experimental condition		
	Autonomy support (n = 32)	Controlling (n = 31)	No goal (n = 31)
Manipulation checks	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Autonomous motivation	5.50[a] (0.98)	4.65[b] (1.24)	3.74[c] (1.31)
Autonomy support	5.77[a] (0.79)	4.33[b] (1.38)	5.41[a] (1.06)
Dependent variables			
Emotion goal Film 1	5.53 (1.22)	5.52 (1.67)	3.58 (2.14)
Emotion goal Film 2	5.06 (1.97)	2.81 (2.07)	4.39 (1.87)
Experienced fear Film 1	3.87 (1.79)	2.87 (1.84)	4.48 (2.11)
Experienced fear Film 2	2.94 (1.92)	2.94 (2.00)	3.90 (2.32)

Note. For manipulation checks, nonidentical superscripts indicate significant difference at $p < .05$.

focused on were self-referencing terms, negations, perceptual processes, verbs, and past-tense verbs.

Results

Manipulation checks. Table 3 presents descriptive statistics for the manipulation check and outcome measures. Significant effects emerged for autonomous motivation, $F(2, 91) = 17.45$, $p < .001$, $\eta^2 = .28$, and autonomy support, $F(2, 91) = 14.41$, $p < .001$, $\eta^2 = .24$. The differences were similar to those found in Study 1.

Main analysis

Emotion goal pursuit. As in Studies 1 and 2, a repeated-measures ANOVA predicting the endorsement of an emotion goal, with film (first vs. second) as a within-subject variable, revealed a significant Condition × Film interaction, $F(2, 92) = 19.94$, $p < .001$, $\eta^2 = .30$. As shown in Figure 3 (top panel), participants in the controlling condition experienced a significant decrease in emotion goal endorsement during the second film, relative to the first, $F(1, 92) = 46.38$, $p < .001$, $\eta^2 = .34$. This effect was not observed in the autonomy-supportive condition, $F(1, 92) = 1.79$, $p < .185$, $\eta^2 = .02$. A significant increase in emotion goal endorsement was observed in the no-goal condition, $F(1, 92) = 4.11$, $p < .046$, $\eta^2 = .04$, indicating these participants spontaneously increased their regulatory efforts during the second film.

Between-group differences emerged during the first film, $F(2, 92) = 13.80$, $p < .001$, $\eta^2 = .23$. Fisher's LSD post hoc test revealed that, as expected, during the first film, participants in the no-goal condition pursued the emotion goal less than participants in the autonomy-supportive or controlling conditions ($p < .001$ and $p < .001$, respectively). No significant differences emerged between the autonomy-supportive and controlling conditions. Significant between-group differences emerged during the second film, $F(1, 92) = 11.03$, $p < .001$, $\eta^2 = .19$. Fisher's LSD post hoc test revealed that during the second film, participants in the controlling condition were less motivated to decrease their fear than participants in the autonomy-supportive or no-goal conditions ($p < .001$ and $p < .002$, respectively). No significant differences emerged between the autonomy-supportive and no-goal conditions.

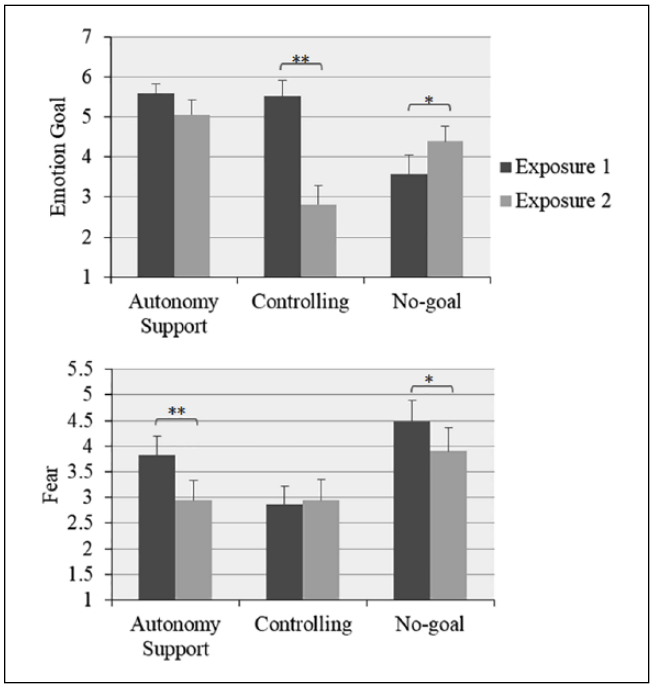

Figure 3. Study 3: Interaction of experimental condition and between-exposure changes in emotion goal pursuit (upper panel) and experienced fear (lower panel).
*$p < .05$. **$p < .01$.

Emotional intensity. Repeated-measures ANOVA predicting fear in response to the films, with film (first vs. second) as a within-subject variable, revealed a significant interaction between condition and the within-subject factor, $F(2, 92) = 3.10$, $p < .050$, $\eta^2 = .06$. Figure 3 (bottom panel) presents the interaction effect. Simple effects analysis demonstrated

Table 4. Study 3: Descriptive Statistics, *F* Values, and Effect Sizes for Pennebaker's Word Categories as a Function of Emotion Regulation Condition.

	Experimental condition				
	Autonomy support ($n = 31$)	Controlling ($n = 30$)	No goal ($n = 30$)		
Word categories	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*F*(2, 68)	η^2
Self-reference	7.28 (2.63)	6.14 (3.81)	7.40 (3.63)	1.27	.03
Verbs	16.79 (5.00)	13.29 (5.83)	16.99 (4.45)	4.97**	.10
Past tense	7.45 (3.45)	5.44 (3.59)	7.84 (4.22)	3.52**	.07
Perceptual processes	10.54 (5.63)	7.75 (7.79)	11.78 (6.25)	4.50**	.09
Negation	2.02 (1.73)	3.06 (2.56)	2.63 (1.63)	2.03	.04

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

that, as expected, participants in the autonomy-supportive condition experienced less fear during the second film, relative to the first, $F(1, 92) = 10.71$, $p < .002$, $\eta^2 = .10$. No between-exposure changes were observed in the controlling condition, $F(1, 92) = 0.05$, $p < .816$, $\eta^2 = .01$, but a significant decrease in fear occurred in the no-goal condition, $F(1, 92) = 4.39$, $p < .039$, $\eta^2 = .05$. As in Study 1, the Condition × Film interaction was nonsignificant, $F(1, 61) = 1.01$, $p < .320$, $\eta^2 = .02$.

Between-group significant differences emerged in response to the first film, $F(2, 92) = 5.54$, $p < .005$, $\eta^2 = .11$. Fisher's LSD post hoc test revealed that participants in the controlling condition experienced significantly less fear than participants in the no-goal condition ($p < .007$), but those in the autonomy-supportive condition did not ($p < .168$). The difference between the autonomy-supportive and controlling conditions did not reach significance ($p < .051$). During the second exposure, the overall between-group effect was nonsignificant, $F(2, 92) = 2.27$, $p < .11$, $\eta^2 = .05$.

Written expression results. To compare frequencies of different word category usage among conditions, we conducted a MANOVA with the word categories as dependent variables and condition as an independent variable to control for Type 1 error inflation. A significant MANOVA emerged, Pillai's trace = 0.20, $F(10, 170) = 1.89$, $p < .050$, $\eta^2 = .10$. Descriptive statistics and univariate *F* tests are in Table 4. Planned contrasts supported our hypotheses, with a few exceptions.

For verbs, past-tense verbs, and perceptual processes words, planned contrasts revealed significant differences between the controlling and autonomy-supportive conditions, $t(88) = 2.67$, $p < .009$; $t(88) = 2.09$, $p < .040$; $t(88) = 2.04$, $p < .044$, respectively, and between the controlling and the no-goal conditions, $t(88) = -3.70$, $p < .006$; $t(88) = -2.47$, $p < .016$; $t(88) = -2.92$, $p < .004$, respectively. Differences between the autonomy-supportive and no-goal conditions were nonsignificant. For personal pronouns and negation words, the differences between the groups were in the same direction as predicted but were not significant. Planned comparisons revealed participants in the autonomy-supportive condition used significantly fewer negation words than those in the controlling condition, $t(88) = -2.01$, $p < .048$.

Discussion

Overall, the results replicated those of Studies 1 and 2. In addition, we found between-group differences in defensiveness, evident in differentiated qualities of written expression. Controlled participants used fewer verbs, past-tense verbs, and perceptual process words. Participants in the autonomy-supportive condition used fewer negation words. Taken together with Studies 1 and 2, the results demonstrate that the costs of controlling contexts emerge over time. Thus, although in the short term controlling contexts can lead to compliance with externally set goals, in the long term these goals are not internalized, leading to decreased spontaneous motivation to pursue them and to more defensive coping. In contrast, autonomy-supportive contexts lead to the continued pursuit of emotion goals, the spontaneous regulation of emotions even when not instructed to do so, and a less defensive coping style.

Two exceptions are worth mentioning. As in Study 1, but unlike Study 2, Study 3's no-goal participants reported similar levels of autonomy support as those in the autonomy-supportive condition. They also spontaneously regulated their emotions in the second film viewing, indicating increased emotion goal pursuit and decreased fear.

Study 4

In Studies 2 and 3, we assessed emotion goal endorsement using a single-item self-report measure. In Study 4, we used a behavioral measure of emotion goal endorsement. We presented participants with a dichotomous task in which before exposure to an emotional picture, they chose whether to regulate their emotions or not. Following exposure, participants indicated their choice. All participants were instructed to use

cognitive reappraisal to regulate emotions. Reappraisal is a strategy that involves changing the meaning of an emotion-inducing stimulus to change its emotional impact (Gross, 1998). They were presented with emotional pictures, and on each trial, they were given one of the three options: (a) to regulate emotions using reappraisal ("reappraise" trials), (b) not to regulate emotions ("watch" trials), and (c) to choose between "reappraise" and "watch" and to indicate their choice ("choose" trials). Participants rated their emotional intensity following each picture. Instructions were given in an autonomy-supportive, a controlling, or a neutral (i.e., with no emphasis on either autonomy support or control) way. The inclusion of a neutral instead of a no-goal condition enabled us to examine whether the observed effects were solely due to a controlling context or also derived from autonomy support. We expected the degree to which participants chose to regulate emotions, when given the option to do so, would vary significantly by condition.

For emotional intensity, we expected participants to experience the lowest emotional intensity in the "reappraise" trials and the highest in the "watch" trials, in which they were instructed not to regulate their emotions. In the "choose" trials, we expected medium emotional intensity levels. We also expected to replicate the patterns of Studies 1 and 2. Specifically, we expected an interaction between conditions and trial type. Thus, participants in the controlling (vs. autonomy-supportive) condition were expected to report the lowest emotional intensity in "reappraise" trials. However, they were also expected to report the largest increase in emotional intensity in the "choose" and "watch" trials.

Method

Participants. Participants were 88 Israeli undergraduates (80% female, $M_{age} = 25.51$ years), who received credit for participation. Participants were randomly assigned to one of the three experimental conditions (autonomy supportive, controlling, neutral).

Procedure. The task was designed to explore whether participants chose to regulate emotions when given a choice to either regulate or not. Participants viewed negative pictures from the International Affective Picture System (Lang, Bradley, & Cuthbert, 2008). All pictures were of medium intensity level ($M = 2.69$, $SD = 0.17$). Each was presented for 7 s. All participants first practiced reappraisal on six pictures. Then, during a 12-trial training phase, they looked at different pictures and were given three types of experimental trials: "reappraise," "watch," or "choose."

Following the practice trials, participants were instructed to use reappraisal in the "reappraise" trials; the instructions were either autonomy supportive or controlling, depending on the condition to which they were assigned. In the neutral condition, participants were simply asked to use reappraisal, without reference to autonomy support or control.

Participants were then shown 60 emotionally eliciting pictures, divided into two blocks. We matched the pictures in each block on intensity level and content. The blocks were fully counterbalanced between participants. Within blocks, instructions and pictures were presented in a random order. Following each picture, participants were asked to rate their negative emotions on a scale of 0 (*not at all*) to 9 (*very much*).

Following the "choose" trials, participants indicated their choice ("reappraise" or "watch"). We summed up the trials in which they selected reappraise and used this as the dependent variable. Finally, participants completed self-report measures, including manipulation checks and demographic variables.

Results

Manipulation checks. Table 5 presents descriptive statistics for the manipulation check and outcome measures. Manipulation checks confirmed the manipulation was successful. We found significant effects for autonomous motivation, $F(2, 85) = 3.92$, $p < .012$, $\eta^2 = .09$, and the ECS scale, $F(2, 85) = 10.17$, $p = .001$, $\eta^2 = .19$. For the latter, the results were in the same direction as in Studies 1 and 3. For the former, there were no significant differences between the controlling and neutral conditions.

Main analyses

Emotion goal endorsement. To examine between-group differences in participants' choice of reappraisal, we conducted a one-way ANOVA, with the sum of "select reappraise" as the dependent variable. This ANOVA was significant, $F(2, 85) = 3.16$, $p < .047$, $\eta^2 = .07$. Planned contrasts revealed significant differences between the autonomy-supportive and controlling conditions, $t(85) = 2.45$, $p < .014$. As expected, participants in the former condition chose to regulate emotions by using reappraisal more than participants in the latter. Although the difference between the autonomy-supportive and neutral conditions was in the expected direction, it was nonsignificant, $t(85) = 1.51$, $p < .135$. The difference between the controlling and the neutral conditions was also nonsignificant, $t(84) = -0.97$, $p < .334$.

Emotional intensity. To examine between-group differences in emotional intensity, we conducted a two-way repeated-measures ANOVA, with trial type ("reappraise," "choose," "watch") as a within-subject factor. As shown in Figure 4, we found a significant within-subject effect, $F(2, 170) = 81.71$, $p < .001$, $\eta^2 = .49$. Planned contrasts indicated significant differences between "reappraise" and "choose" trials, $F(1, 85) = 52.18$, $p < .001$, $\eta^2 = .38$, and between "choose" and "watch" trials, $F(1, 85) = 50.98$, $p < .001$, $\eta^2 = .38$. As expected, participants experienced the lowest emotional intensity in the "reappraise" trials, medium levels in the "choose" trials, and the highest levels in the "watch" trials.

Table 5. Study 4: Descriptive Statistics for Manipulation Checks and Dependent Variables.

	Experimental condition		
	Autonomy support (n = 29)	Controlling (n = 29)	Neutral (n = 30)
Manipulation checks	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Autonomous motivation	4.10[a] (1.25)	3.32[b] (1.18)	3.48[b] (0.93)
Autonomy support	5.87[a] (0.87)	4.55[b] (1.49)	5.61[a] (1.11)
Dependent variables			
Emotional intensity ("reappraise" trials)	3.16 (1.34)	2.68 (1.58)	3.40 (1.03)
Emotional intensity ("choose" trials)	3.69 (1.47)	3.89 (1.62)	4.09 (1.21)
Emotional intensity ("watch" trials)	4.59 (1.60)	4.91 (1.75)	4.70 (1.46)
Emotion goal	12.03 (3.47)	9.59 (4.16)	10.57 (3.53)

Note. For manipulation checks, nonidentical superscripts indicate significant difference at $p < .05$. Emotion goal refers to the sum of trials in which participants selected to reappraise in the "choose trials."

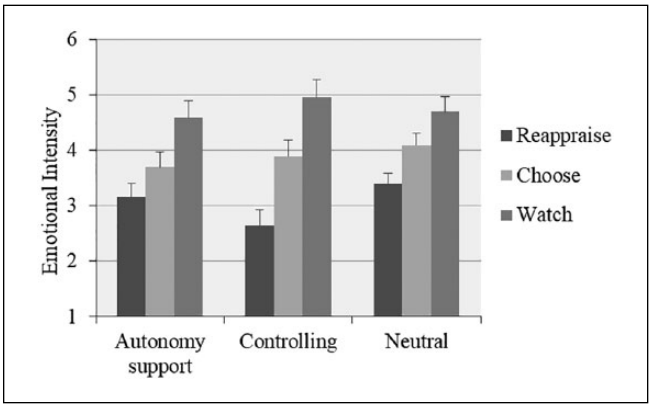

Figure 4. Study 4: Interaction of experimental condition and experimental trial on participants' negative emotional intensity.

Also, as expected, the interaction between conditions and trial type was significant, $F(4, 170) = 2.73$, $p < .031$, $\eta^2 = .06$. We conducted post hoc analyses, using a separate one-way ANOVA for each experimental condition. The analysis revealed significant increases in emotional intensity in all three conditions, but the effect size was larger for the controlling condition: $F(2, 84) = 14.65$, $p < .001$, $\eta^2 = .26$; $F(2, 84) = 34.54$, $p < .001$, $\eta^2 = .45$; and $F(2, 84) = 12.15$, $p < .001$, $\eta^2 = .22$ for the autonomy-supportive, controlling, and neutral conditions, respectively. As seen in Figure 4, participants in the controlling condition experienced larger increases in emotional intensity across trials than their counterparts. Tests of within-subject contrasts revealed a significant interaction between conditions when comparing "reappraise" and "choose" trials, $F(1, 85) = 3.19$, $p < .046$, $\eta^2 = .07$, but not "choose" and "watch" trials, $F(1, 85) = 1.04$, $p < .357$, $\eta^2 = .02$. To determine the source of the former comparative interaction ("reappraise" vs. "choose" trials), we first looked at the autonomy-supportive and controlling conditions; in this case, the interaction was significant, $F(1, 56) = 4.60$, $p < .036$, $\eta^2 = .08$. Then, we tested it for the controlling and neutral conditions. This interaction was nonsignificant, $F(1, 57) = 2.88$, $p < .095$, $\eta^2 = .05$. These results suggest this interaction emerges from difference between the autonomy-supportive and controlling conditions, not the controlling and neutral ones.

Finally, to explore whether controlled participants experienced lower emotional intensity in the "reappraise trials" followed by higher intensity in the "choose" and "watch" trials, we tested between-group differences in emotional arousal for each experimental trial type. Contrary to our predictions, univariate tests for the different trials were nonsignificant: $F(2, 85) = 2.20$, $p < .117$, $\eta^2 = .05$; $F(2, 85) = 0.54$, $p < .586$, $\eta^2 = .01$; and $F(2, 85) = 0.28$, $p < .759$, $\eta^2 = .01$ for "reappraise," "choose," and "watch" trials, respectively.

Discussion

Study 4 replicated the main findings of the previous studies, demonstrating that when given a choice to regulate emotions, participants in the autonomy-supportive condition, but not those in the neutral condition, were more motivated to pursue the emotion goal than those in the controlling condition. In the "reappraise" and "choose" trials, participants in the controlling condition experienced larger increases in emotional intensity than participants in the autonomy-supportive condition, but not more than those in the neutral condition. Unlike previous studies, although controlled participants reported lower emotional intensity than other participants when instructed to regulate (i.e., in the "reappraise" trials), these differences did not reach significance.

These findings follow Studies 1 to 3, indicating that controlling contexts are less likely to lead participants to persist in emotion regulation without explicit instructions. The fact that the observed interaction was due to the difference between the controlling and the autonomy-supportive conditions, and not

the controlling and the neutral conditions, supports the assumption that controlling contexts undermine emotion goal pursuit, but autonomy-supportive contexts benefit it.

General Discussion

A defining feature of emotion regulation is the activation of an emotion goal (Gross, Sheppes, & Urry, 2011; Tamir & Millgram, 2017). Yet people are not always motivated to regulate their emotions (e.g., Suri, Whittaker, & Gross, 2015). Our findings suggest that the type of motivating context (i.e., autonomy supportive or controlling) makes a difference in the pursuit of emotion goals. In four studies, we demonstrated that participants instructed to regulate emotions in autonomy-supportive and controlling contexts were equally likely to pursue emotion goals when instructed to do so. However, in a subsequent test, when given the choice to continue to regulate emotions, the former were more likely than the latter to persevere. Study 3 also showed that participants in the controlling condition engaged in more defensive processing of emotional stimuli.

Controlling contexts and autonomy-supportive contexts seemed equally likely to motivate participants to regulate their emotions under direct instructions to do so, but these efforts may be explained by compliance. When there were no explicit instructions (often the case in daily life) and participants chose whether to continue to regulate their emotions or not, a controlling context was less likely to motivate them to persist in emotion regulation. In contrast, autonomy-supportive contexts led participants to continue regulating their emotions, suggesting they had internalized the emotion goal. These continued efforts led to subsequent benefits in terms of how they processed emotional stimuli and how they felt. These findings are consistent with the predictions of SDT, according to which autonomy support is conducive to a deeper internalization of behavioral regulation, resulting in more flexible and persistent goal pursuit (Koestner, 2008).

Theoretical Implications

Our investigation applied SDT's distinction of autonomy-supportive and controlling socializing contexts to the pursuit of emotion goals. Our findings are consistent with those of previous studies (e.g., Benita et al., 2014; Benita et al., 2017; Williams et al., 2002), showing the importance of autonomy-supportive (vs. controlling) contexts to adaptive and sustained goal pursuit. Just as autonomy-supportive (vs. controlling) contexts make people more likely to independently avoid a cigarette or stick to their diet (e.g., Williams et al., 2002), our research shows it also makes them more likely to independently choose to reappraise their emotions, even without explicit instructions.

Our four studies complement each other in several respects. In Study 1, we assessed emotion goal pursuit by referring to the outcome of this process, the emotional experience. In Studies 2 and 3, we added emotion goal endorsement. In Study 4, we assessed emotion goals using a behavioral measure. The replication of results across methods of assessing emotion goal pursuit inspires confidence in our conclusions.

The results for emotional experience shed another light on these processes. In Studies 2 and 3, participants in the autonomy-supportive conditions did not show greater decreases in emotional experience in the second viewing of a fear-eliciting film than those in the no-goal condition, suggesting they did not necessarily put more effort into regulating their emotions when not instructed to do so. Instead, like participants in the no-goal condition, they were likely to have habituated to the film. However, because they were instructed to regulate emotions, and those in the no-goal condition were not, they ended up experiencing less fear. Controlling contexts are likely to undermine this natural habituation process.

In all studies, except Study 3, participants in the no-goal or neutral conditions perceived the experimenter to be as autonomy supportive as those in the autonomy support condition did. This pattern reflects the nature of our autonomy support measure, which assessed perceptions of autonomy support in the given context (broadly defined) and did not explicitly refer to perceived support of autonomy in emotion regulation. Thus, participants in the no-goal and neutral conditions perceived the experimental context as generally autonomy supportive, although in Study 2, the experimenter was perceived as less autonomy supportive. This might also explain the differences between Studies 2 and 3. Although the studies had similar designs, in Study 3, participants in the no-goal condition showed increased emotion goal pursuit and decreased fear in the second film viewing. Arguably, then, when the context was autonomy supportive, participants were motivated to spontaneously pursue emotion goals, even when not instructed to do so.

Whereas our measure of perceived autonomy-supportive contexts was general, our second manipulation check, for autonomous motivation, pertained specifically to emotion regulation. In all four studies, participants in the autonomy-supportive condition reported the highest levels of autonomous motivation to regulate emotions. Importantly, in Study 4, participants in the neutral condition were asked to regulate emotions; participants in the no-goal conditions in Studies 1 to 3 were not asked to do so. In Study 4, the autonomy-supportive context yielded better outcomes than the neutral context. Taken together, the results suggest that to facilitate consistent emotion goal pursuit, it is important to instruct individuals to pursue emotion regulation in an autonomy-supportive way, not simply to be noncontrolling.

In our studies, autonomy-supportive and controlling contexts differentially predicted quality of written expression. Controlling contexts produced written texts indicative of more defensive coping. These results echo the findings of previous research applying the SDT framework to emotion regulation (Roth et al., 2014; Roth et al., 2018; Weinstein &

Hodgins, 2009) and suggest controlling contexts led our participants to avoid emotional stimuli, constrict reports to present experiences, and avoid reporting visual experiences. Arguably, because these controlled participants were less motivated than other participants to regulate their emotions in the second film, they were less motivated to engage with the emotional material. Meanwhile, instead of trying to reduce stress by constricting their expression of emotionally relevant content, participants in the autonomy-supportive condition openly processed and expressed what they had seen.

Practical Implications

Individuals are often instructed to regulate emotions by people around them. This can happen in laboratory experiments, psychotherapy, or intimate and parent–child relationships. However, outside the laboratory, people do not tend to think about the way they instruct others and how or whether this may motivate them to regulate their own emotions. For example, a therapist might instruct a patient to practice emotion regulatory strategies, without considering whether such instructions will motivate her to engage in emotion regulation of her own accord. Our results suggest that if socializing agents want individuals to engage in emotion regulation even when they are not explicitly instructed to do so, they need to do it in an autonomy-supportive (rather than controlling) manner.

Parents play an important role in the development of children's emotional regulatory capacities (Thompson, 2014). They encourage children to regulate emotions, and they expect them to comply. Kochanska and Aksan (1995) differentiated between two kinds of children's compliance: In committed compliance, the child appears wholeheartedly committed to the parental agenda, eager to endorse and accept it; in situational compliance, the child performs the behavior but lacks sincere commitment and does not enact it in the absence of parental control. Committed, but not situational, compliance is related to rule internalization (e.g., Kochanska & Aksan, 1995) and is predicted by autonomy-supportive parenting (e.g., Laurin & Joussemet, 2017). Future research should explore whether children's consistent use of emotion regulatory strategies beyond parental supervision (e.g., at school) depends on their level of autonomy in adopting emotion goals and on the degree to which their parents (teachers) are autonomy supportive or controlling.

Failures to regulate emotion are common in psychopathology (Aldao, Nolen-Hoeksema, & Schweizer, 2010). Previous research has demonstrated that some forms of psychopathology reflect a lack of motivation to regulate emotions. For instance, depressed individuals are less likely than nondepressed ones to spontaneously use reappraisal but are able to effectively do so upon instruction (Ehring, Tuschen-Caffier, Schnülle, Fischer, & Gross, 2010). Perhaps, depressed individuals are less autonomously motivated to regulate emotions and, therefore, less likely to use effective emotion regulation strategies of their own accord. Supporting such individuals' sense of autonomy in their emotion regulation might increase their volitional engagement in such behavior.

Future Directions and Limitations

This research probed the effects of autonomy-supportive and controlling contexts on regulating negative emotions. However, people sometimes want others to regulate their positive emotions. For example, instead of encouraging a depressed child to downregulate feelings of sadness, her parents may encourage her to engage in emotion regulation strategies that make her feel happier. Future research should explore whether autonomy-supportive practices are also more likely than controlling ones to motivate individuals to regulate their positive emotions.

This research has several limitations. First, although our experimental designs allowed us to test causal effects and mechanisms, they may lack external validity. Future research should use more ecological designs to test whether autonomy-supportive versus controlling contexts influence emotion regulation in daily life. Another limitation was our reliance on self-reports in measuring emotional intensity. Such measurements might be susceptible to self-report biases. Future research should include other indices of emotional intensity, such as physiological and implicit measures. A related possible limitation is the possibility of experimental demand, as this might account for reported emotional experiences following explicit instruction. However, it cannot account for differences in emotional experience without explicit instructions, as there is no demand in such cases.

Although our manipulation of autonomy-supportive and controlling contexts adopted previously published manipulations (e.g., Benita et al., 2014; Deci et al., 1994; Hooyman et al., 2014), it is possible that the manipulation influenced other unintended constructs. For example, our effects might have been driven by the experimenters' differential levels of agreeableness, not by their autonomy support or control. Indeed, autonomy-supportive agents are likely to be more agreeable than controlling ones. However, we believe that "being nice" in and of itself was not responsible for our participants' perseverance in the pursuit of emotion goals. First, our manipulation was effective in creating autonomy-supportive versus controlling contexts, leading participants to pursue emotion goals either autonomously or in a controlled way. Second, although agreeableness is an important predictor of good relationships, we are not familiar with studies showing its importance in goal internalization. Thus, we suggest that the socializing agent's agreeableness is unlikely to predict perseverance in emotion goal pursuit. Future research should directly rule out this alternative explanation.

In Study 4, when calculating emotional intensity, we averaged across trials, regardless of whether participants chose to regulate emotions or not. Thus, it is possible that a different

pattern of results would have emerged had we calculated emotional intensity only in trials where participants chose to regulate emotions. Unfortunately, our design did not allow this, as there were not enough "choose" trials to assess between-group differences within each type of trial. Future research should include designs that allow such comparisons to better capture how and when autonomy-supportive versus controlling contexts promote effective coping with emotional stimuli.

Declaration of Conflicting Interests

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Supplemental Material

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