

Drawing to Distract: Examining the Psychological Benefits of Drawing Over Time

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Individuals gravitate toward the arts during times of emotional stress. We examined the benefits of drawing over several sessions to determine whether drawing improves mood and, if so, whether it does so because it allows for emotional expression or distraction. After inducing a sad mood, we asked participants ($n = 40$) to draw over 4 consecutive days. Half of the participants were instructed to draw as a way to express their feelings (express condition) and half were instructed to draw as a way to focus and observe (distract condition). Mood was measured after the first and final testing session and a life satisfaction scale was administered at the beginning of the first testing session and after the final session. We found that drawing to distract improved mood more than drawing to express, both after a single drawing session and after 4 sessions. These findings are consistent with previous findings on drawing, but run counter to reports on the relative health benefits of expressive writing. We suggest drawing and writing may affect mood through different mechanisms.

Keywords: drawing, emotion regulation, distraction, emotional expression

Individuals gravitate toward the arts during times of emotional stress: art is made in prisons as a way to communicate (Safe Street Arts Foundation, 2013) and drawings are made after natural disasters as a way to cope with emotional distress (Dewan, 2007). Art-making has many possible therapeutic benefits: it is a way to make meaning of an event, a way to communicate distress and thus provide some kind of relief, and a way to regulate emotions (Winner, 1982). Individuals with no training in the arts turn to the arts in times of trouble: the arts provide meaning and purpose (they help us express our feelings) as well as a means of distraction (they shift our attention away from what is upsetting us).

The Benefits of Drawing

The arts provide constructive ways of dealing with trauma. Visual artists have often talked about art as a form of therapy. Artists may realize—whether consciously or unconsciously—that creating art has the power to improve mood. Many case studies of patients receiving art therapy report mood improvement (e.g.,

Briks, 2007; Pifalo, 2006; Tipple, 2008) and a few experimental studies have also demonstrated that art therapy is beneficial in reducing trauma-related symptoms (Schouten, de Niet, Knipscheer, Kleber, & Hutschemaekers, 2015). However, there is limited experimental research on the benefits of art therapy and, furthermore, these studies cannot tell us whether the art therapy was causally implicated in the improvement since art therapy is typically coupled with other kinds of therapy. Also, art therapy is an activity that varies across clients and has many uses and takes a variety of forms. According to the American Art Therapy Association (2013), it “uses art media, the creative process, and the resulting artwork to explore feelings, reconcile emotional conflicts, foster self-awareness, manage behavior and addictions, develop social skills, improve reality orientation, reduce anxiety, and increase self-esteem.” The question still remains whether the simple act of drawing has psychological benefits outside of an art therapy setting.

While research on the psychological benefits of art is still in its infancy, recent evidence has demonstrated that making art has immediate benefits. De Petrillo and Winner (2005) showed that drawing improves mood more strongly than does copying geometric shapes, arguably because copying is not as engaging as drawing. Other researchers have examined the relative benefits of using drawing as a means of expression versus using drawing as a means of distraction. Dalebroux, Goldstein, and Winner (2008) had participants watch a sad film clip and then randomly assigned them to complete one of three activities: scan a sheet of symbols (non-drawing task), draw something happy (distraction), or draw something expressing their mood (expression). They found that immediately after drawing, mood improved the most when drawing was used as a form of distraction rather than expression. The mood

This article was published Online First June 23, 2016.

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This research was supported by Brooklyn College of the City University of New York. We thank Ellen Winner for her comments on an earlier version of this article.

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benefits were specific to a distraction task that involved creating something (as in the case of drawing something happy) versus any distraction task (scanning symbols).

It may be that in the Dalebroux et al. study mood improved more in the distraction condition because participants were asked to draw something happy. Drake and Winner (2012) sought to investigate the benefits of drawing a neutral object. They found that drawing a neutral image, as opposed to expressing one's feelings, improved short-term mood in adults (Drake & Winner, 2012). The mood benefits of drawing occurred not only after participants watched a sad film clip (an impersonal event) but also after participants reexperienced the saddest event they had ever experienced (a highly personal event). The finding that drawing improves mood via distraction is consistent with other research showing that distraction is an effective way of coping with negative affect (Fredrickson & Cohn, 2008; Fredrickson & Levenson, 1998).

It may be that drawing to distract improved mood more than drawing to express because it is cognitively demanding. In the Dalebroux et al. (2008) and Drake and Winner (2012) studies, participants in the distract conditions were asked to create images that were incongruent with the negative mood induction. As suggested by Van Dillen and Koole (2007), tasks that are cognitively demanding load our working memory and prevent mood congruent processing (p. 715). Those in the distract condition were not focused on the negative content of the mood induction (a congruent mood) but were shifting their attention away from the negative content (an incongruent mood).

The Benefits of Expressive Writing

While the benefits of drawing repeatedly over time have not been assessed, another art form, expressive writing, has been associated with many positive outcomes when the writing activity is extended over time (Pennebaker & Chung, 2011). In these studies, participants were assigned to either write about an upsetting event (expressive writing) or a neutral topic (e.g., describe your living room). Writing about an upsetting event improved immune function (Pennebaker, Kiecolt-Glaser, & Glaser, 1988), raised academic performance (Pennebaker & Francis, 1996), and decreased the number of medical appointments (Pennebaker & Beall, 1986) more than writing about a neutral topic. Through writing, individuals can frame and rework their experience into words (Pennebaker & Chung, 2011). Expressive writing may improve health because it allows people to construct coherent narratives of their experiences. The formation of this coherent narrative may help people regulate and understand their emotions (Klein & Boals, 2001; Pennebaker, Mayne, & Francis, 1997). In contrast to what has been found for the psychophysiological and health benefits of expressive writing, the psychological benefits of expressive writing are mixed: some studies have shown benefits over time while other studies have found no benefits.

Although some studies have shown the benefits of expressive writing to occur long after the intervention has ended (Smyth, 1998), others have found immediate benefits of expressive writing. Barclay and Skarlicki (2009) asked participants to write about an injustice they experienced in the workplace (focusing on either their feelings, thoughts, or thoughts and feelings) or a control topic for four consecutive days. Those who wrote about their thoughts

and feelings reported higher psychological well-being, suggesting that in some cases the benefits of expressive writing may occur in as few as four days.

Overview of the Current Study

Researchers have shown that after one session, drawing to distract improved mood more than drawing to express (Dalebroux et al., 2008; De Petrillo & Winner, 2005; Drake & Winner, 2012; Pizarro, 2004). Do the benefits of drawing persist after several sessions? And if so, how does drawing improve mood over several sessions—through distraction or expression? Following from the work on the benefits of writing, we investigated whether drawing to distract or drawing to express improves mood more after several sessions.

We asked participants to recall and relive the saddest event they had ever experienced. The standard writing paradigm developed and validated by Pennebaker and his colleagues was adapted for the drawing intervention (Pennebaker, 1997). On four consecutive days, participants either drew their feelings about the saddest event they recalled (expression) or drew neutral objects (distraction). We measured participants' affect after drawing on the first session and final session. We also asked participants to report on their overall life satisfaction prior to beginning the first testing session and after completion of the final testing session. Similar to previous research on expressive writing (e.g., Barclay & Skarlicki, 2009; North, Meyerson, Brown, & Holahan, 2013), we measured mood on the final day of the study.

Consistent with previous research (Dalebroux et al., 2008; Drake & Winner, 2012; Pizarro, 2004), we hypothesized that drawing would improve mood more after a single session when used to distract rather than to express. We tested two competing hypotheses for the benefits of drawing over several sessions. On the one hand, over several sessions drawing to express may be more beneficial than drawing to distract because it should allow participants to come to terms with and understand an upsetting event—just as through writing individuals can frame and rework their experience into words (Pennebaker & Chung, 2011). Expressive drawing over time may allow individuals to work through their experience just as expressive writing does.

On the other hand, it may be difficult for individuals to capture, frame, and rework their experience through a visual medium without any language. Thus, drawing to distract may be more beneficial than drawing to express even when extended over several sessions. In this case, the benefits of drawing to distract may be due to the immediately engaging aesthetic properties of the medium. Of course, it is also possible that neither activity will be beneficial to participants over time.

Method

Participants

Participants were 40 undergraduates (23 females, 17 males) ranging in age from 19 to 25 ($M = 21.4$; $SD = 1.2$) who were recruited through online postings. They received \$40 for participating. The sample was 77.5% Caucasian, 17.5% Hispanic/Latino, and 5.0% Asian.

Materials

Mood induction. In order to induce a sad mood, we asked participants to “think about the saddest event you have ever experienced.” Participants recorded the event on a sheet of paper and then were guided through a 3-min visual imagery task (developed by Rusting & Nolen-Hoeksema, 1998). The visual imagery task enabled participants to recall vividly the sad event by having them focus on the sights, sounds, thoughts, and feelings they had experienced during the event.

Activity. Participants were randomly assigned to one of two conditions: drawing to express or drawing to distract, with no difference in gender distribution between conditions ($\chi^2 = 0.354$, $p = .554$). There were 21 participants (13 females) in the express condition and 19 participants (10 females) in the distract condition. Participants were given a set of colored pencils and a 9 in. \times 11 in. sheet of white paper and were asked to draw for 15 min.

Instructions in the drawing to express condition were as follows:

I want you to draw about the event you recalled. I want you to draw as a way to focus on, feel, and make sense of the experience you recalled. Use the drawing activity as a way to express your feelings.

On subsequent testing sessions (Days 2–4), participants in this condition were given the same instructions to use drawing “as a way to express their feelings.”

Instructions in the drawing to distract condition were as follows:

I want you to look down at your shoes and draw them as you see them. I want you to draw as a way to focus, observe, and make sense of what you see. Use the drawing activity as a way to help you look closely.

On subsequent testing sessions (Day 2–4), participants in this condition were given the same instructions to using drawing “as a way to help you look closely” but they were asked to draw different objects (their hand on Day 2; an object in the testing room on Day 3; and a different object in the testing room on Day 4).

Prior research has indicated that 4 days and 15 min is an optimal number of sessions and duration for the expressive writing paradigms (Frattaroli, 2006). A meta-analysis by Frattaroli found the effects for writing were strongest when participants wrote for 15 min or more. Consistent with the work of Pennebaker and others who asked participants to write about different topics each day, we asked participants to draw different items on each day of the study.

Positive Affect and Negative Affect Schedule (PANAS). To assess affect, we administered the PANAS developed by Watson, Clark, and Tellegen (1988). The PANAS contains 20 words that describe different feelings and emotions (e.g., interested, jittery, upset, excited). Participants were asked to indicate, for each word, the extent to which they were feeling that emotion on a 5-point scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). A global score was computed separately for positive affect and negative affect.

Satisfaction with Life Scale. The Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) assessed participants’ overall life satisfaction. Participants were presented with five statements (e.g., “In most ways my life is close to my ideal”) and were asked how much they agreed with each statement from 1 (*strongly disagree*) to 7 (*strongly agree*). A total life satisfaction score was computed by summing the responses for each item.

Procedure

Participants completed four drawing sessions over the course of four consecutive days. On Day 1, participants first completed the Satisfaction with Life Scale (baseline) and then they were asked to recall the saddest event they had ever experienced. After recalling the sad event, they completed the PANAS (Time 1) and were randomly assigned to use drawing as a form of expression or as a form of distraction. Finally, they completed the PANAS (Time 2). Consistent with the work on expressive writing studies over multiple sessions (Pennebaker & Chung, 2011), we did not include a baseline mood measure (before the mood induction). This allowed us to avoid introducing a demand characteristic (Young, Adelstein, & Ellis, 2006). Furthermore, previous research has demonstrated the visual imagery task to be effective in inducing a negative mood in participants (Rusting & Nolen-Hoeksema, 1998).

On Days 2 and 3, participants returned to the lab and were asked to make a drawing in their respective condition. On Day 4, participants returned to the lab for the final drawing session. After making a drawing in their respective condition, we asked participants to complete the PANAS (Time 3) and the Satisfaction with Life Scale (after 4 days).

Results

Table 1 presents mean positive affect and negative affect for Time 1 (after the mood induction), Time 2 (after one session of drawing), and Time 3 (after four sessions of drawing) by condition. There was no difference between conditions after the mood induction for positive affect, $F(1, 38) = 1.644$, $p = .208$, $d = -0.41$ and negative affect, $F(1, 38) = 0.020$, $p = .889$, $d = -0.04$.

Positive Affect

Mood improvement. A repeated measures analysis of variance (ANOVA) with condition (2) as the between-subjects factor and time (3) as the repeated measure was performed on positive affect. There was an effect of time, $F(2, 76) = 33.746$, mean square error (MSE) = 19.340, $p < .001$, $\eta_p^2 = 0.470$. A paired-sample t -test revealed that positive affect increased from after the mood induction to after one session of drawing, $t(39) = 6.120$, $p < .001$, $d = 0.94$; and after the mood induction to after four sessions of drawing, $t(39) = 6.144$, $p < .001$, $d = 0.48$. There was no effect of condition, $F(1, 38) = 0.543$, $p = .466$, $\eta_p^2 = 0.014$.

Table 1
Positive Affect and Negative Affect by Condition at Time 1, Time 2, and Time 3

Condition	Time 1		Time 2		Time 3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Positive affect						
Distract	17.24	5.95	24.95	6.92	28.62	7.03
Express	19.74	6.38	22.53	6.93	24.26	9.08
Negative affect						
Distract	21.81	8.43	13.14	4.13	11.38	3.19
Express	22.16	7.13	17.53	8.03	14.79	6.06

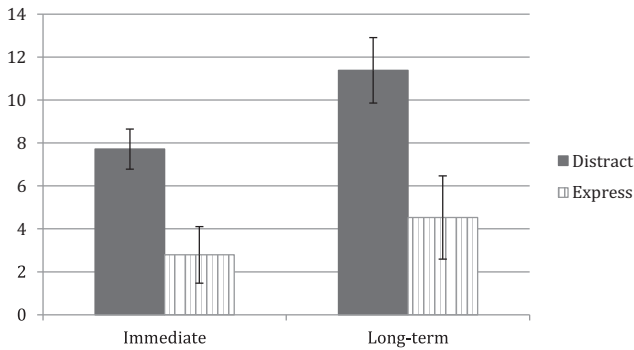


Figure 1. Positive affect change by condition.

More importantly, there was an interaction of time with condition, $F(2, 76) = 6.444, p = .003, \eta_p^2 = 0.145$, as shown in Figure 1. To understand the interaction, we computed a change score for mood improvement after one day (Time 2 – Time 1) and after 4 days (Time 3 – Time 1). As discussed by Zumbo (1999), the use of a difference score is an adequate measure to reflect change. Next, we conducted a multivariate ANOVA by condition with the change score as the dependent variable. There was a significant difference in positive affect by condition after one session of drawing, $F(1, 38) = 9.562, p = .004, \eta_p^2 = 0.201$ and after several drawing sessions, $F(1, 38) = 7.882, p = .008, \eta_p^2 = 0.172$. Those in the distract condition experienced a greater increase in positive affect after one session and four sessions of drawing than did those in the express condition.

Drawing after 1 day versus 4 days. A contrast analysis was performed to determine whether drawing was more beneficial for mood improvement after one versus several drawing sessions as recommended by Keppels and Wickens (2004, p. 358). First, we computed a contrast score by subtracting the difference score for one day (Time 2 – Time 1) from the difference score for 4 days (Time 3 – Time 1). A contrast score of zero would indicate that the activities improved positive affect equally. A positive contrast score would indicate that drawing improved positive affect more after 4 days than after 1 day while a negative contrast score would indicate that drawing improved positive affect more after 1 day than after 4 days.

Finally, a one-sample t -test was performed on the computed contrast score allowing us to determine whether the contrast was significantly different from zero and, if so, in which direction. Drawing after 4 days improved positive affect significantly more than did drawing after 1 day (as indicated by a positive contrast score), $t(39) = 3.103, p = .004, d = 0.47$. This difference was driven by the distract condition. A one-sample t -test performed on those in the distract condition revealed that drawing after 4 days improved positive affect more than did drawing after 1 day, $t(20) = 3.179, p = .005, d = 0.66$. However, there was no difference in the effectiveness of drawing after 1 day and after 4 days for those in the express condition, $t(18) = 1.280, p = .217, d = 0.28$.

Negative Affect

Mood improvement. A repeated measures ANOVA with condition (2) as the between-subjects factor and time (3) as the

repeated measure was performed on negative affect. There was an effect of time, $F(2, 76) = 45.020, MSE = 18.974, p < .001, \eta_p^2 = 0.542$. A paired-sample t -test revealed that negative affect decreased from after the mood induction to after one session of drawing, $t(39) = 6.604, p < .001, d = -1.02$; and after the mood induction to after four sessions of drawing, $t(39) = 7.786, p < .001, d = -0.45$. There was no effect of condition, $F(1, 38) = 2.569, p = .117, \eta_p^2 = 0.063$; nor was there an interaction of time with condition, $F(2, 76) = 2.330, p = .104, \eta_p^2 = 0.058$ (see Figure 2). Thus, both activities lowered negative affect equally after one and four drawing sessions.

Drawing after 1 day versus 4 days. As described above, a contrast analysis was performed to determine whether drawing was more beneficial for negative mood improvement after one versus several drawing sessions. A positive contrast score would indicate that drawing improved negative affect more after 4 days than after 1 day while a negative contrast score would indicate that drawing improved negative affect more after 1 day than after 4 days.

A one-sample t -test was performed on the computed contrast score allowing us to determine whether the contrast was significantly different from zero and in which direction. Drawing after 4 days improved negative affect significantly more than did drawing after 1 day (as indicated by a positive contrast score), $t(39) = 2.947, p = .005, d = 0.45$. Drawing after 4 days improved negative affect significantly more after 1 day for the distract, $t(20) = 2.285, p = .033, d = 0.47$ and marginally more after 1 day for the express conditions, $t(18) = 2.017, p = .059, d = 0.44$.

Life Satisfaction

Table 2 presents mean life satisfaction at baseline (at the beginning of the study) and after 4 days of drawing by condition. A repeated measures ANOVA with condition (2) as the between subjects factor and time (2) as the repeated measure was performed on overall life satisfaction. There was an effect of time, $F(1, 38) = 4.332, MSE = 3.443, p = .044, \eta_p^2 = 0.102$: life satisfaction increased after drawing for 4 days. There was no effect of condition, $F(1, 38) = 0.851, p = .362, \eta_p^2 = 0.022$, and no interaction of time with condition, $F(1, 38) = 2.894, p = .097, \eta_p^2 = 0.071$.

Discussion

The goal of this study was to assess the psychological benefits of drawing over several sessions for a nonclinical sample of adults.

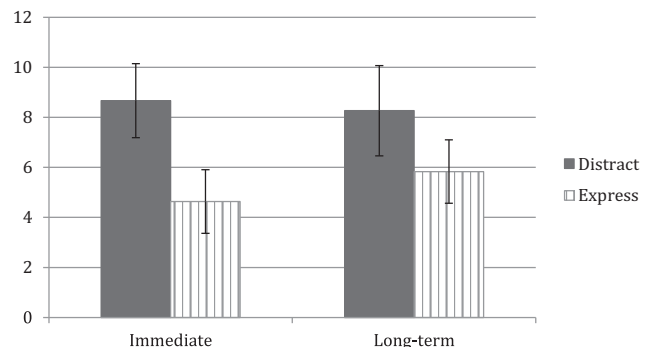


Figure 2. Negative affect change by condition.

Table 2
Life Satisfaction for Each Condition at Time 1 and Time 3

Condition	Baseline		After 4 days	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Distract	26.91	5.41	28.48	4.60
Express	26.37	3.65	26.53	3.79

After inducing a sad mood, we asked participants to use drawing as a form of distraction or as a form of expression. Participants completed four drawing sessions over four consecutive days. Mood was measured after the first and final testing session and a life satisfaction scale was administered at the beginning of the first testing session and after the final testing session. We hypothesized that after a single session drawing would improve mood more when used as a form of distraction.

Consistent with our hypothesis, we found that drawing to distract improved mood more than drawing to express after a single drawing session, but only for positive affect and not negative affect. While the distract condition improved positive affect more than did the express condition, negative affect improved equally for both conditions. Our findings are partially consistent with Drake and Winner (2012) who found that drawing to distract improved both positive and negative affect more than drawing to express. This discrepancy may be due to differences in the instructions used for each study. In the Drake and Winner study, participants were instructed to “draw the event” (p. 258) they recalled, while in the current study we asked participants to use the activity to “focus on, feel, and make sense of the experience recalled.” Unlike the instructions used in the Drake and Winner study, our instructions may have allowed participants to reframe and rework the experience resulting in decreases in negative affect for the express condition.

We tested two competing hypotheses regarding the benefits of drawing over several sessions: (a) drawing to express may improve mood more than drawing to distract, presumably because it allows individuals to frame and rework their experience through images; or (b) drawing to distract may improve mood more than drawing to express, presumably because of the engaging aesthetic properties of the medium. We found that drawing to distract improved positive affect more after four drawing sessions than drawing to express. We found no difference in negative affect between conditions after four drawing sessions. This finding is inconsistent with the expressive writing literature. Previous research has demonstrated psychological and health benefits of expressive writing over time (with studies ranging from a few days to several months). The findings for psychological benefits are less clear. While some studies have failed to find a benefit of expressive writing over time, other studies have shown that expressive writing does improve self-reported psychological outcomes (Pennebaker & Chung, 2011). One study found benefits for expressive writing over 4 days but this study focused on a specific topic—*injustice*—and not an upsetting event (Barclay & Skarlicki, 2009).

Why might expression be more beneficial for writing but distraction more beneficial for drawing? We suggest here that these mediums afford different kinds of emotion regulation

strategies. Language is primarily propositional, referential, and discursive (Goodman, 1976; Langer, 1957), and thus easily invites us to express our thoughts and feelings in words. The formation of a coherent narrative may assist people in regulating and understanding their emotions (Klein & Boals, 2001), presumably due to the use of causal words (e.g., reason, because) used to describe the event (Pennebaker et al., 1997). Writing invites us to integrate and analyze our thoughts (Lyubomirsky, Sousa, & Dickerhoof, 2006), and this may then permit us to let go and move beyond our negative emotions (Pennebaker & Francis, 1996). In short, writing about one’s feelings is a task that we all know how to do.

In contrast, conveying feelings through images may be more challenging. Drawing is not a primarily referential symbol system; it is presentational rather than discursive (Goodman, 1976; Langer, 1957). The act of drawing pulls our attention toward the surface properties of color, line, texture, and so forth. We may therefore focus more on these aesthetic properties rather than on any underlying referential meaning. In short, we suggest that writing affords expression due to the referential nature of the symbol system of language, while drawing affords distraction due to the immediately engaging aesthetic properties of the medium. Future research should compare the emotion regulation benefits of drawing and writing in the same study, using identical instructions, over several sessions. Additionally, future research should examine the psychophysiological benefits of drawing in both the short- and long-term.

The differences between drawing and writing may also be explained by familiarity with these two media. First, we often use writing to express our thoughts and feelings and we may have less experience expressing ourselves with drawing. Second, art classes (taken as part of the school curriculum or as an extracurricular activity) tend to focus more on drawing from observation (especially from high school on) rather than on expression. Therefore, participants may have had more experience drawing from observation than drawing expressively. Previous research has shown that experience with drawing does not impact mood improvement. De Petrillo and Winner (2005) found no difference in mood improvement for artists and non-artists and Drake and Hodge (2015) found that frequency of drawing was unrelated to mood improvement. However, these studies did not assess the use of different emotion regulation strategies through drawing. It would be important for future studies to assess participants’ experience with using drawing to distract versus express.

Finally, we found that the benefits of drawing persist over several days. After the final drawing session, positive affect and life satisfaction were higher and negative affect was lower. This was especially true for the distract condition: positive affect was higher in the distract condition than in the express condition. The effects found here apply to drawing over 4 days. Future research should examine the benefits of drawing over several months comparing the relative benefits of drawing to distract versus drawing to express. As Smyth (1998) determined in his meta-analysis, the benefits of writing are strongest over longer periods of time and the same may be true for drawing.

Based on the expressive writing literature, we asked participants to draw a different object each day. It is possible that the benefits of drawing to distract can be explained by novelty: the

participants in the distract condition were asked to draw a new object each day while those in the express condition were asked to draw the same object each day. Future research should have participants make the same drawing in the express condition and the same drawing in the distract condition. This would allow us to tease apart whether the effects are due to emotion regulation strategy or novelty. Finally, this study was designed to assess distraction and expression as two distinct emotion regulation strategies. It is possible that these two strategies exist as a continuum. Future search is warranted to explore this further.

This is the first study to investigate the emotion regulation benefits of drawing over several sessions outside of an art therapy setting. Our findings show that drawing to distract improves psychological outcomes both immediately and after several sessions. Given the contrast between our results and those reported for writing, we suggest that drawing and writing may improve mood through different mechanisms.

Future research should directly compare expressive drawing and expressive writing. It may be that expressive drawing works via a different mechanism than expressive writing. While expressive writing allows us to create a coherent verbal narrative that helps us to make sense of a stressful experience, expressive drawing allows us to express in a nonverbal way what cannot so easily be put into words. As the modern dancer Isadora Duncan is reputed to have said: "If I could tell you what it meant, there would be no point in dancing it." Nonverbal forms of art are ways of meaning making that are different from but no less powerful than verbal ways of meaning making (Goodman, 1976), and both may lead to mood improvement and stress reduction.

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Received July 2, 2015

Revision received November 19, 2015

Accepted March 21, 2016 ■

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