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Does Art Improve Mood? A Test of a Key Assumption Underlying Art Therapy

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Abstract

We investigated whether artmaking improves mood, and if so, whether this effect is best explained by "catharsis" or "redirection." In Experiment 1, participants viewed tragic images and then either drew a picture based on their feelings or copied shapes. Those who drew exhibited more positive mood after drawing; those who copied shapes did not. Mood improved equally for those who drew negative and nonnegative images, suggesting that for some, catharsis led to improved mood and that for others, redirection led to improved mood. In Experiment 2, to test whether artmaking improved mood simply because people were distracted by making a drawing, we gave participants a word puzzle to complete, a task that does not allow expression of feeling through symbolic content. Completion of a word puzzle did not improve mood. These results suggest that artmaking increases the pleasure dimension of mood and does so via either catharsis or redirection.

Introduction

The arts have long been viewed as therapeutic. Plato believed that music could calm the soul. Aristotle (1992) believed that dramatic tragedy had a cathartic effect; tragedy was said to arouse the emotions of pity and fear in order to discharge these feelings and leave the viewer feeling purified and purged. Freud (1928/1961), too, espoused a cathartic view of the arts, arguing that artworks allow both creator and audience to discharge unconscious instinctual wishes resulting in pleasure and relief from tension.

The assumption that the arts serve a therapeutic function underlies the practice of art therapy in which artmaking is considered not only a diagnostic tool but also a means of improving depressed mood and reducing stress (Fryear 1992; Waller & Gilroy, 1992). Art therapy is meant to foster a relationship between client and therapist (Dalley, 1984; Schaverien, 1995), provide the individual with a means of nonverbal communication of unconscious feelings (Carter, 1996), and allow the person to externalize and thereby resolve conflicting feelings (Bernstein, 1995; Kramer, 2000; Waller & Gilroy, 1992). Artmaking has been said to be able to alleviate aggressive feelings because the individual replaces or sublimates these urges through art (Kramer, 2000; Levy, 1995). Levy also argued that the act of creating serene images could serve to alleviate anxiety. And Kramer argued that pleasure is gained from the very process of creating in art therapy. Thus there are a variety of means by which art therapy could lead to a more positive mood and to a reduction in stress.

The evidence on which these claims rests has been limited to testimonials by artists claiming that the act of making art helps them stay sane and to clinical case studies in which patients who engage in art therapy improve over the course of treatment (Levens, 1995; Levy, 1995; Kramer, 2000; Naumburg, 1950). Case studies, however, cannot tell us whether art therapy played a causal role in an individual's recovery because the person may have improved due to other forms of therapy also received or due simply to time. In two studies reported here, the claim that the arts serve a therapeutic function was tested experimentally. Specifically, we tested whether engaging in drawing when one is experiencing negative mood helps to improve mood along one or both of the dimensions of pleasure and arousal.

Underlying this study is a view of affect as defined principally by two major and continuous dimensions: pleasure-displeasure, and arousal-sleepiness (Mayer & Gaschke, 1988; Watson & Tellegen, 1985). The concept of pleasure, referred to here as "valence," is central in psychology. Russell, Weiss, and Mendelsohn (1989) pointed out that early psychologists such as Titchener (1910) and Wundt (1912/1924) believed pleasure to be an essential aspect of affect. How much pleasure one experiences consistently emerges when individuals are asked to report on how they feel (Russell, 1979, 1980). The concept of arousal can also be seen as early as the writings of Wundt, who described a continuum of tension and relaxation (Russell et al., 1989). Russell and Mehrabian (1977) examined 42 self-report affect measures, most of which included many more than two dimensions, and found that most of the variance on these scales could be predicted from how people scored on pleasure-displeasure and arousal-sleepiness. Finally, the valence and arousal dimensions of emotion have been shown to be independent of one another (Feldman Barrett & Russell, 1998; Russell, 1979; Russell & Pratt, 1980). In three studies of self-reported current affect, Feldman Barrett and Russell demonstrated that

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valence (positive vs. negative feelings) was independent of activation or arousal (e.g., alert, tense vs. fatigued, calm).

In the current studies, we measured mood in terms of these two dimensions. As Russell et al. (1989) argued, if one asks people to report on only one of these dimensions, they may confuse the two. In the first experiment, we tested two alternative mechanisms by which making a work of visual art might repair negative mood. We refer here to improving mood as "mood repair." Following from Aristotle's view of catharsis, as well as that of Freud's, we reasoned that when one is feeling distressed, the act of creating images that express negative feelings should allow these feelings to be discharged. Mood should then improve. Such a model would be consistent with evidence that when people write about negative experiences, they feel better afterwards (Pennebaker, 1997). But suppose people who feel distressed create positive images and then feel better? It would be difficult to explain such a finding via catharsis. Therefore, we reasoned that under such circumstances people might improve in mood because the positive images they create direct them away from ruminating on negative feelings and allow them to reach a more positive mood state.

The creation of images, whether positive or negative in content, is a task that allows people to express feelings and meaning through symbols (Langer, 1953). Creating images is also an engaging task that might improve mood simply by virtue of being distracting. To determine whether artmaking improves mood because it allows for the expression of feelings and meaning or because it provides distraction, we carried out a second experiment in which we examined the effect on mood of a distracting task that did not allow for the expression of feelings and meaning. The addition of such a distracting task was critical if we were to distinguish between these two possible effects on mood.

Following the work of Feldman Barrett and Russell (1998), we defined mood repair as an improvement in two independent dimensions of affect: valence (mood becomes more positive) and arousal (mood becomes calmer). If our assumption was correct that making works of art could repair mood, such activity should result in moods that were more positive and calmer. This assumption was tested on a nonclinical sample of college students that included those with interest and ability in art (art majors) and those without special interest and ability in art (nonart majors). In the first experiment, we induced a negative mood and assessed mood through an affect grid (Russell et al., 1989). We then asked participants either to make a drawing based on their feelings (art condition) or to copy a series of shapes (the copy condition served as a visual-motor control condition). The artworks produced were classified in terms of whether they depicted negative, positive, or neutral content. After the art or copy activity, mood was again assessed by the affect grid.

Both the catharsis and redirection models predict that after making a work of art, mood will improve either in valence or arousal or both. We can distinguish which model is at work by the content (positive, neutral, negative) of the art produced. The catharsis model predicts that the art will depict negative images; the redirection model predicts neutral or positive content. We predicted that mood would be improved (with valence higher, arousal lower) more in the art than the copy condition and that this effect would be stronger for art majors (because they have more ability and interest in art than nonart majors). We made no predictions between the catharsis versus redirection models since both are equally plausible.

EXPERIMENT 1

Method

Participants

The participants were 42 college undergraduates from Boston College, ranging in age from 18 to 22 years (mean age = 19 years). Twenty were art majors (15 female, 5 male) and 22 were nonart majors (12 female, 10 male). Art majors were recruited from studio art classes; nonart majors were recruited from psychology classes. Nonart majors received one research credit for participation; all students were offered a chance to win a $15.00 gift certificate to a local mall. The sample consisted primarily of students from middle- to upper-middle class, well-educated families. Ten art majors and 12 nonart majors were randomly assigned to an art condition; 10 art majors and 10 nonart majors were randomly assigned to a copy (control) condition.

Materials and Procedure

Participants were tested in groups of 4 to 10 in a quiet room. First, we attempted to instill a negative mood in participants by showing them a series of still images containing photos of tragedy (illness, death, and poverty). Following this, participants were shown a 5-minute video also containing images of tragic events: the Holocaust, the terrorist attacks of 9/11, a funeral scene, and people suffering from cancer, AIDS, and Alzheimer's disease. Participants were then asked, "How do you feel right now?" and were instructed to close their eyes and reflect for 15 seconds. They were told to pay attention to physical sensations, emotional feelings, and any visual images or words that came to mind. Participants were debriefed after their testing sessions.

Following this, the Affect Grid developed by Russell et al. (1989) was administered (Figure 1). The Affect Grid is a self-report, single-item scale that has been shown to be both valid and reliable and that assesses two dimensions of affect states: valence (positive feelings or pleasure vs. negative feelings or displeasure) and arousal (extreme excitement or tension vs. sleepiness or calmness). As mentioned, valence and arousal have been shown to be independent bipolar dimensions of affect, with pleasure the bipolar opposite of displeasure and arousal the bipolar opposite of sleepiness (Feldman Barrett & Russell, 1998). Combinations of these two factors assess specific states such as stress (unpleasant activation), calm (pleasant deactivation), gloominess (unpleasant deactivation), and enthusiasm (pleasant activation). Indeed, Feldman Barrett and Russell

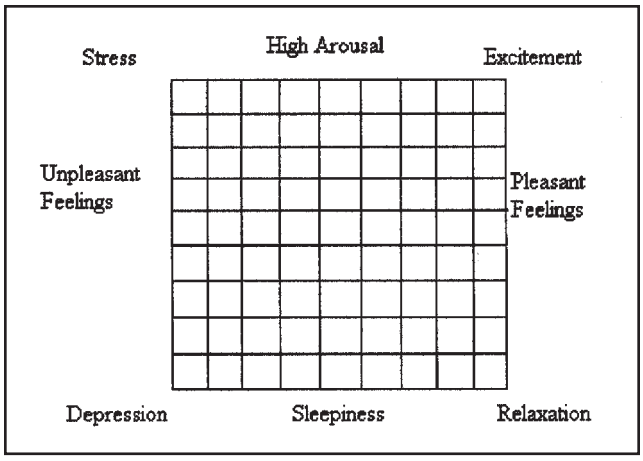

Figure 1 Affect Grid used to assess valence and arousal, from Russell, Weiss, and Mendelsohn (1989)

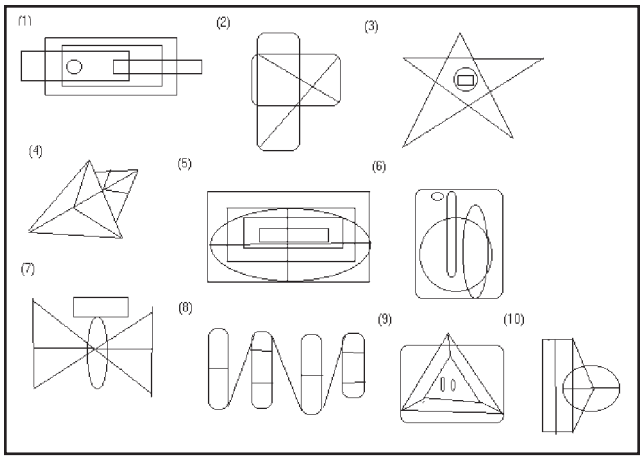

Figure 2 Shapes used for copy task

argue that most of the variance in mood-descriptive scales can be predicted from these two simple factors. Participants were told to place a single mark somewhere within the grid. The arousal score is determined by the number of the row checked, counting from the bottom. The valence score is determined by the number of the column checked, counting from the left. Each score can range from 1 to 9. Participants were given 5 minutes to read the instructions and complete the grid.

Participants in the art condition were then given sheets of 8" x 11" construction paper in a variety of colors, along with colored pencils, pastels, crayons, markers, and chalk. They were told, "Create your own picture of anything you would like based on how you are feeling right now. It can be realistic, but it does not have to be realistic. It can be scribbles, lines, or anything else you choose." Participants in the copy condition were given sheets of 8" x 11" white paper and the same marking materials. The copy condition was included as a visual-motor control condition to rule out the possibility that the act of making marks on paper, independent of whether personal feelings and meaning could be expressed, improved mood. Students in the copy condition were given 10 geometric shapes to copy, each presented on a separate piece of white 8" x 11" paper (Figure 2). They were told to copy each shape precisely in the order given (from 1 to 10), with each shape copied on its own piece of blank white paper and not colored in. They were instructed to use any of the materials they were offered.

In order to decrease any feelings of inhibition about drawing, participants in both conditions were told that their drawing would not be shown to anyone other than the researchers. There was no time limit for either task. After the drawings or copies were completed, the Affect Grid was administered again with the same instructions as before. This was followed by four open-ended questions:

1. How do you feel now after completing your assigned task?
2. Do you personally feel that creating art/copying changed your mood?
3. If so, why?
4. What materials did you use and why?

Scoring

For each participant, we computed a valence and an arousal change score based on responses on the Affect Grid. Responses to the open-ended questions were also classified. Participants were classified as reporting feeling more or less positive and as feeling more or less activated after the drawing or copy task. These classifications allowed us to determine whether participants' verbal descriptions of how their moods had changed mirrored the change scores computed from the two administrations of the Affect Grid. Responses to the second and third open-ended questions were scored in terms of participants' beliefs about why their mood had changed (if it had). Responses to the fourth open-ended question did not relate to any of our hypotheses and were not scored; in retrospect, this question did not provide useful data and thus was excluded from analysis.

To test between the catharsis and redirection models, we examined the content of the drawings produced in the art condition and classified them in terms of whether they expressed negative or nonnegative (positive or neutral) content. Drawings were classified in terms of their symbolic content as either negative/tragic (portraying sad images), positive (portraying happy images), or neutral (portraying no clear emotion). We reasoned that if the drawings depicted sad events or expressed sad feelings, the catharsis model would best explain the valence-elevating effect of artmaking. And if the drawings depicted happy or even neutral events, the redirection model would best explain the valence-elevating effects. Two judges blind to the test group scored each work independently and agreed 90% of the time. Judges were simply told to classify each work as expressing sad images, happy images, or neither kind of image.

Table 1
Mean Mood Scores (and Standard Deviations) at Time 1 and Time 2: Experiment 1

	Time	
	T1	**T2**
Art condition		
Mood valence		
Art majors	2.8(.79)	6.2(1.0)
Nonart majors	2.5(.52)	5.4(.90)
Mood arousal		
Art majors	5.1(1.7)	5.1(.99)
Nonart majors	4.6(1.6)	4.5(1.9)
Copy condition		
Mood valence		
Art majors	2.5(.97)	3.3(1.0)
Nonart majors	3.3(1.4)	3.7(1.3)
Mood arousal		
Art majors	3.9(1.5)	3.6(1.4)
Nonart majors	4.5(1.9)	3.5(1.4)

Results

Table 1 shows the mean scores and standard deviations at Time 1 (T1) and Time 2 (T2) and mean valence and arousal change scores for both conditions and majors. A series of one-tailed *t* tests were used to determine whether mood changed in either valence or arousal from T1 to T2.

Valence

As predicted, valence became more positive in the art condition; this occurred for both art majors, $t(9) = 7.52$, $p < .005$, and nonart majors, $t(11) = 8.68$, $p < .005$. Valence also became more positive in the copy condition for art majors, $t(9) = 3.20$, $p = .01$, but not for nonart majors, $t(9) = 1.81$, $p = .10$. A 2 x 2 (Condition x Major) ANOVA was performed on valence change scores. There was a main effect of condition, $F(1,41) = 59.914$, $MSE = 1.14$, $p < .0001$. This occurred because the mean valence change was more positive for those in the art condition than for those in the copy condition ($M = 3.14$ vs. $M = .60$). There was no effect for major, $F(1, 41) = 1.786$, $MSE = 1.14$, $p = .189$. Further, condition did not interact with major, $F(1, 41) = .016$, $MSE = 1.14$, $p = .90$.

Arousal

Contrary to prediction, artmaking did not make participants calmer—whether they were art majors, $t(9) = .00$, $p = 1.0$, or nonart majors, $t(11) = -.11$, $p = .91$. There was also no significant decline in arousal in the copy condition either for art majors, $t(9) = -1.41$, $p = .19$ or for nonart majors, $t(9) = -1.79$, $p = .10$. A 2 x 2 (Condition x Major) ANOVA was also performed on arousal change scores. There was no effect of condition, $F(1,41) = 1.431$, $MSE = 3.66$, $p = .239$ and no effect of major, $F(1,41) = .69$, $MSE = 3.66$, $p = .41$. And once again, condition did not interact with major, $F(1,41) = 0$, $MSE = 3.68$, $p = .99$.

Taken together, the valence and arousal results provide evidence that artmaking elevates mood more than copying does, copying elevates mood in art majors but not in nonart majors, and neither artmaking nor copying lowers arousal.

Question 1

Responses to Question 1 in which participants reported how they felt after the art or copy task were consistent with the above-reported results. Participants were more likely to respond to the first question if they were in the art than the copy condition, as shown in Table 2 (suggesting that affect was not salient after the copy task). As can also be seen in Table 2, those in the art condition were far more likely than those in the copy condition to report an elevation in mood valence ($n = 17$ vs. $n = 1$), mirroring the Affect Grid findings.

To choose between the catharsis versus redirection models, we examined the content of the images created. Results were mixed: 9 participants drew negative images, and 13 drew either neutral or positive images. Figure 3 shows a sample drawing of each type. We next examined separately the mood change scores for those who had made art with negative content and for those who had made art with neutral or positive content. The catharsis model predicts that mood will improve only after negative content; the redirection model predicts that mood will improve only after nonnegative content. Table 3 shows the mean valence and arousal scores at T1 and T2 for those who produced negative images compared to those who produced neutral or positive images. A *t* test comparing change scores for the two groups showed that mood valence scores improved

Table 2
Responses to Open-ended Question 1

	Valence increase	Valence decrease	Arousal increase	Arousal decrease	No mood change	No response
Condition						
Art	17	0	9	3	1	0
Copy	1	0	3	2	3	11
Puzzle	4	2	10	3	4	2

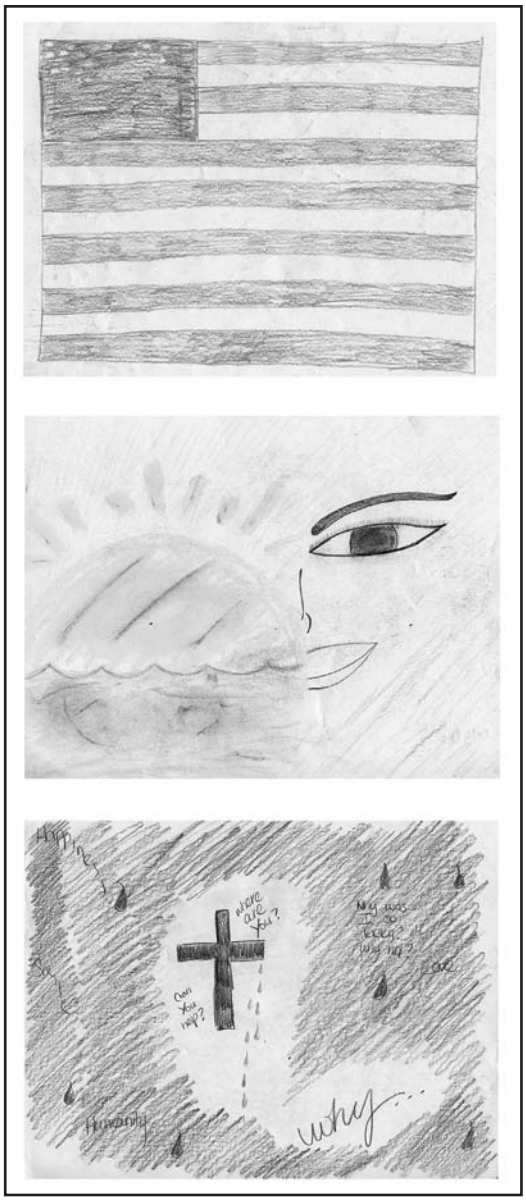

Figure 3 Examples of drawings coded as negative (bottom), positive (middle), and neutral (top)

Table 3
Mean Mood Scores (and Standard Deviations) at Time 1 and Time 2 for Participants Who Made Tragic Versus Nontragic Art: Experiment 1

	Time	
	T1	**T2**
Type of images		
Negative		
Mood valence	2.6(.52)	5.3(1.4)
Mood arousal	5.1(1.8)	4.6(1.8)
Positive or neutral		
Mood valence	2.6(.78)	5.7(1.0)
Mood arousal	4.6(1.5)	5.0(1.3)

equally for *both* groups of participants and that arousal scores did not significantly differ: for valence, $t(20) = 0.00$, $p = 1.0$; for arousal, $t(20) = 19$, $p = .085$.

Questions 2 and 3

We also examined responses to Questions 2 and 3 to determine whether those who made negative images reported something consistent with catharsis, whereas those who made neutral or positive images reported something consistent with redirection. Of the nine people who produced negative images, seven offered catharsis explanations for why they felt better after drawing. For example, one said:

> I chose red paper because it related to my feelings of pain and rage. I was using the drawing as a way to convey the way I was feeling. I suddenly found myself vigorously sketching and was suddenly more awake and vigilant. It was crazy how good it felt to get that out of me!

Another said:

> I drew a picture of what I had been exposed to, expressing how sad and frustrated I was. I used dark-colored paper and dark-colored crayons to best convey the negative mood I was feeling. I used the artwork to portray anger and remorse. It felt good to release this negative energy, making me feel better.

And a third said:

> While drawing I was suddenly more alert and began to vigorously draw all the anger and sadness I felt. It felt good to let out all of these negative feelings. When I was done my pencil was almost all chiseled away, and I felt relieved and a lot better.

Two participants who made tragic images offered no explanation.

Of the 13 people who produced neutral or positive images, nine offered distraction explanations for why they felt better after drawing. For example, one said, "I enjoyed being able to engage in the art task drawing things that make me happy. This helped me forget about the tragic images I had seen." Another said, "I find enjoyment and relaxation in drawing. It helps me forget about anything negative going on in my life." Yet another said, "I felt an increase in mood, calmer, and less agitated. Drawing kept my mind off the negative images." Three participants who made neutral or positive images offered no explanation. Although such introspective reports may not be reliable, we have reported them because they are consistent with the content of the art produced.

Participants in the copy condition most often responded to Questions 2 and 3 by saying they felt bored and that their mood remained negative after the copying activity. For example, "I started to feel tired and bored after simply copying shapes. So, along with remaining upset from the bad images, I also felt drained." And, "No real change occurred from copying shapes. The copy task was not a big enough distraction. Too simple and monotonous. It was easy to do without having to focus, so I kept thinking

about the negative images I saw." The contrast between the responses to the copy and the art task are consistent with the statistical finding that artmaking, but not copying, elevated mood.

Discussion

Artmaking made mood valence more positive but had no effect on lowering mood arousal. Whether students had a prior interest and ability in art (as indexed by choosing art as a major) had no effect on the outcomes. Thus, artmaking appears to enhance mood valence even for those with no special interest or ability in art. Further, this effect is not due to the visual-motor act of mark-making because copying meaningless forms had far less effect. Copying had little or no effect on valence (elevating valence only somewhat for art majors), and no effect at all on arousal.

Neither the catharsis nor the redirection model appeared to be operating uniformly across participants. The valence of the images produced, along with the self-report accounts, suggests that some people felt better due to catharsis whereas others felt better due to redirection. Those who drew pictures of tragedy reported feeling better, and they believed that this was because their drawings allowed them to express their negative emotions. They felt that by expressing their negative emotions, these emotions were released. Thus they described the mechanism of catharsis. In contrast, those who drew pictures of pleasant or neutral content also felt better and reported that this was because making the drawings served as a way for them to escape from or even deny their negative feelings. Thus they described the mechanism of redirection.

Because the art task appeared to improve the mood of some participants by directing them away from their negative feelings, we wondered why the copy task did not also achieve this effect. Perhaps a critical feature of the art task is that it permits the expression of feelings through the construction of images. If so, the copy task may be ineffective in improving mood because it does not permit expression of feelings. It is also plausible, however, that the copy task failed because it was not sufficiently challenging and thus did not take people's minds off their negative feelings. Therefore, in Experiment 2, we tested whether a task that does not permit expression of feelings but is challenging might be as effective as the art task in improving mood. If so, we could provide evidence that mood can be repaired by any task that takes a person's mind off negative feelings. If not, we could provide evidence that what is critical in mood repair is that individuals have an avenue by which to create meaning and express feelings.

EXPERIMENT 2

Method

Participants

Twenty college undergraduates ranging in age from 18 to 22 years (mean age, 19 years; 12 female, 8 male) participated in Experiment 2. Participants were nonart majors recruited from nonart classes. Only nonart majors were included because Experiment 1 showed no effect for academic major. Participants received one research credit for participation and were offered the chance of winning a $15.00 gift certificate to a local mall.

Table 4
Mean Mood Scores (and Standard Deviations) at Time 1 and Time 2 in the Puzzle Condition: Experiment 2

	Time	
	T1	**T2**
Valence	3.2(1.4)	3.8(1.4)
Arousal	4.6(1.6)	5.2(1.5)

Materials and Procedure

Experiment 2 was identical to Experiment 1 except that instead of being asked to make art or copy shapes, participants were given a choice of completing one of two verbal puzzles—a word-find or a crossword puzzle. These were chosen because they were verbal tasks that were challenging and distracting but did not allow expression of emotion. Performance was compared to nonart majors in Experiment 1 in the art condition.

Results

Mean scores are shown in Table 4. Valence increased from T1 to T2, $t(19) = 2.6$, $p = .04$, but arousal did not change, $t(19) = 1.39$, $p = .18$. A one-way ANOVA was then performed, combining the 21 participants in Experiment 1 from the art condition with the 20 participants in Experiment 2. Condition (art, puzzle) was the independent variable, and valence change score was the dependent variable. There was a significant effect of condition, $F(1,31) = 23.37$, $MSE = 11.41$, $p < .001$, due to the fact that the mean elevation in mood valence after making art was 2.92 ($SD = 1.16$), whereas the mean elevation in mood valence after the puzzle task was only .65 ($SD = -1.35$). The same ANOVA was also performed with arousal as the dependent variable. In this case, there was no effect of condition, $F(1,31) = 2.73$, $MSE = 11.41$, $p = .11$.

Despite the fact that arousal scores did not rise after the puzzle task, responses to Question 1 suggest that the puzzle task may have evoked feelings of stress. Twelve of the 20 participants reported feeling anxious while trying to finish the puzzle in time and said they thought of the task as a form of academic pressure. In contrast, those making art never spoke of artmaking as stressful.

Discussion

Data from Experiment 2 suggest that mood valence increases significantly more after making a drawing than after solving a puzzle. As with the art activity, engaging in the puzzle task had no effect on arousal. These results suggest that artmaking improves mood because it allows peo-

ple to express meaning and feelings through the images they construct. After all, this is one of the key differences between creating one's own image and copying a meaningless image. When creating one's own image, one can choose what to draw, and one can draw something that conveys how one feels about a situation or event. When individuals were asked to engage in a challenging task that did not allow for expression of feelings or creation of meaning, their mood did not improve as much.

Conclusions

The two studies reported here provide support for claims made by art therapists about the power of art expression to heal. These two studies demonstrate that the act of creating a work of art makes people feel more positive in their mood and, hence, elevates their measure of mood valence. Neither copying geometric shapes nor solving a word puzzle had the same degree of beneficial effect on mood. Although we did not study a clinical population and thus did not measure healing in regard to illness, the finding that artmaking improves mood is consistent with the view that art therapy promotes psychological healing.

The fact that there was little difference between art majors and nonart majors suggests that the effect works equally well for those without interest or ability in art as it does for those with artistic skills. Apparently, one need not be an artist to experience the mood-repair benefit of making art. This finding is also consistent with claims made by art therapists about the positive effects of artmaking because most individuals who receive art therapy treatment are not artists. However, we did find one difference between art majors and nonart majors. Copying shapes elevated mood somewhat for art majors. One explanation for this finding is that the art majors might have treated the job of copying as an artistic task, thereby making it a more pleasurable task for them than for the nonart majors.

Because the puzzle task had little effect on mood, we can conclude that the power of artmaking to improve mood was not due simply to it being a task that is interesting and engaging. If this were the explanation, then both the puzzle and the art task should have substantially improved mood. Instead, the beneficial effect of artmaking on mood is likely to be linked to the fact that creating personal images is an open-ended task in which the individual's feelings can be expressed through the images created. We found evidence that for some individuals, the act of making a work of art serves as a means of releasing negative feelings; for others, making a work of art serves as a distraction from negative rumination and reorients the individual in a more positive direction. Thus, art appears to improve mood for some through catharsis and for others through redirection.

The finding that artmaking improves mood provides experimental support for what art therapists believe from personal experience. If artmaking genuinely improves people's moods on the dimension of pleasure, then it is no wonder that people choose to make art under dire circumstances, as testified by the art of concentration camp inmates. The pleasure-producing effect of artmaking is also consistent with another puzzling but oft-reported finding: The incidence of affective disorders is significantly higher among those who go into the arts compared to the population at large (Jamison, 1993). Perhaps individuals who experience emotional pain go into the arts because artmaking serves a therapeutic function. This speculation is certainly consistent with artists' reports that they could not survive without making art. Graham Greene (1980) expressed this view when he wrote, "Writing is a form of therapy. Sometimes I wonder how all those who do not write, compose or paint can manage to escape the madness, the melancholia, the panic fear which is inherent in the human situation" (p. 285).

These two studies are based on a relatively small sample of students. Further research on similar populations as well as on clinical populations is called for if we are to be able to generalize these findings. However, they represent initial attempts to test an underlying assumption of art therapy through an experimental design. Future research should also test the generality of these findings across other art forms besides the visual arts.

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