

RUNNING HEAD: EXPRESSIVE SUPPRESSION AND ACTING

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Expressive Suppression and Acting Classes

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Abstract

Frequent use of expressive suppression to regulate one's emotions can impair long-term health and well-being for both children and adults. Therefore, there are important pragmatic benefits to identifying contexts in which individuals learn to avoid expressive suppression. We hypothesized that individuals involved in acting classes -- a context in which expression of emotion is highly valued -- may use expressive suppression as an emotion regulation technique less than do other individuals. Study 1 showed that adolescents majoring in acting at a high school for the arts used suppression less than did adolescents majoring in other kinds of art classes (visual arts, music). Study 2 showed that after ten months of acting (but not visual arts) classes, expressive suppression decreased in elementary school aged children. These findings suggest that experience in acting may be associated with a decrease in the use of expressive suppression, a relatively maladaptive emotion regulation strategy.

KEYWORDS: Emotion Regulation; Suppression; Drama/Acting

Expressive Suppression and Acting Classes

Expressive suppression, when people consciously try to inhibit the expression of what they are feeling (Gross & Levenson, 1993), can prolong suffering (Carver, Scheier, & Weintraub, 1989; Hayes, Strosahl, & Wilson, 2003), inhibit relationship formation (Butler Eglhoff, Wilhelm, Smith, Erickson, & Gross (2003), impair memory (Richards & Gross, 2000), and have a negative effect on well-being (Chawla & Ostafin, 2007; Gross & John, 2003; John & Gross, 2004). For both children and adults, the suppression of emotion expression does not decrease the psycho-physiological experience of that emotion, and may even increase it (Gross & Levenson, 1993; 1997). There are also autonomic costs to expressive suppression. In particular, participants who watched a disgusting film and were instructed to hide their feelings from others showed an increased activation in the sympathetic nervous system (i.e., greater vasoconstriction, greater skin conductance), compared to participants who watched the same film, but were not asked to hide their feelings (Gross, 1998).

Long-term use of expressive suppression as an emotion regulation strategy can harmfully affect interpersonal and social functioning (Gross & John, 2003; John & Gross, 2004) and social satisfaction and feelings of connectedness (Srivastava, Tamir, McGonigal, John, & Gross, 2009), decrease overall feelings of positive emotions (Gross & Levenson, 1997), lower feelings of personal authenticity, and cause higher levels of rumination and possibly depression (Gross & John, 2003). There are indications that children who inhibit their emotional behavior have higher levels of anxiety and depression (Plutchik, 1993) and that children who suppress their anger have higher levels of internalizing symptoms than do children who appropriately express anger (Zeman, Shipman, & Suveg, 2002).

There are likely to be situations in which suppression is more vs. less adaptive (e.g. expressive suppression is linked to negative outcomes for European-Americans, but not for Chinese students living in Hong Kong; Soto 2011). Nonetheless, in the long-term, expressive suppression does not appear to be an adaptive strategy to regulate emotions. It is important, therefore, to identify ways to decrease the use of expressive suppression.

Not only are there individual differences in the propensity to use expressive suppression (e.g., Gross & John, 2003), but there are also situational effects, with some contexts facilitating the use of expressive suppression less than others (for example, at the “Burning Man” arts festival, where “radical self expression” is practiced, participants use significantly less expressive suppression and more cognitive reappraisal to regulate their emotions than in typical, daily life: McRae, Heller, John, Gross, 2011). We set out, therefore, to identify a context in which the impetus to use expressive suppression may be relatively low. One such context is acting. Actors must express emotions constantly: a character portrayed without any emotional expression is boring to watch! Because acting requires active emotional expression, actors should use less expressive suppression than do non-actors. The tendency to avoid expressive suppression onstage may also transfer into off-stage emotion regulation techniques. This may be true even for young individuals who have had relatively limited exposure to acting.

The goal of the current studies was to test whether children and adolescents who receive acting training are less likely to suppress their emotions than are those who do not receive such training. In Study 1 we examined adolescent actors and their use of expressive suppression. In Study 2 we conducted a quasi-experimental longitudinal study to test whether an association between acting and expressive suppression may be causal or due rather to self-selection biases.

Study 1

In Study 1, we examined whether emotion regulation strategies used by adolescents enrolled in acting classes differed from those used by a matched group of adolescents enrolled in other kinds of arts classes. We hypothesized that participants involved in acting would engage in expressive suppression less than those involved in other art forms. We predicted no group differences in other forms of emotion regulation, such as cognitive reappraisal. We also expected the groups to be equivalent in terms of their typical emotional experiences.

Method

Participants. Participants were ninth graders at one of two high schools where students can major in an art form (one public, urban school, and one suburban, residential school). The actor group consisted of 28 adolescents (9 males, 19 females; aged 13-16, $M = 14\text{yr}, 4\text{ mo}$) majoring in theatre. Students had some previous experience in acting, but none had received the high intensity (nine hours per week plus productions) of training they received at their new schools. The non-actor group consisted of 25 adolescents (8 males, 17 females; aged 13-16, $M = 14\text{yr}, 4\text{mo}$) majoring in either visual arts or music. Participants were part of a larger study investigating the effects of acting training on a variety of outcomes (Goldstein & Winner, 2012), and were already enrolled in their freshman year before recruitment for this study took place. All participants were tested in a quiet room at their school by the first author or by trained research assistants, in small random groups of 3-5. Participants were paid a small fee in exchange for their participation.

Measures. Adolescents completed the *Emotion Regulation Questionnaire* (Gross & John, 2003), which assesses participants' tendency to regulate their emotions using one of two strategies: Expressive suppression (e.g. "I keep my emotions to myself", "I control my emotions by not expressing them") and Cognitive Reappraisal (e.g. "When I want to feel more positive

emotion (such as joy or amusement), I change what I'm thinking about"). Adolescents also completed the *Affect Intensity Measure (AIM)*, (Larsen & Deiner, 1987) which assesses emotional intensity based on items such as "I feel pretty bad when I tell a lie." Participants completed the *Berkeley Expressivity Questionnaire* (Gross & John, 2003), which assesses how often the participant expresses emotions, with separate subscales for positive and negative emotions (e.g., "I've learned it is better to suppress my anger than to show it;" "It is difficult for me to hide any fear I may feel;" "I laugh out loud when something funny happens"). Participants completed all scales using a 1 (strongly disagree) to 7 (strongly agree) point Likert scale.

Additional Control Measures. Parents indicated how much previous experience their child had with acting and/or the visual arts in an open-ended questionnaire. Parents also indicated their highest level of education, using the following scale: some high school (1 pt); high school degree (2 pts); some college (3 pts); BA, BS, BFA (4 pts); MA, MS, MFA, MBA, MPH (5 pts); PhD, MD, JD (6 pts) (Norton, Winner, Cronin, Overy, Lee, & Schlaug, 2005).

Results

We conducted one-way ANOVAs on each of our outcome measures to determine the effect of group membership on each facet of emotion experience and regulation separately. Table 1 displays all descriptive statistics and results. The actor and non-actor group did not differ in age, gender distribution or SES (all F s < 1.5), and previous experience with their art form did not predict any outcome measures. One-way ANOVAs revealed no effect of group on level of expressivity (Berkeley Expressivity Questionnaire) $F(1, 51) = .37, p = .55$, and revealed that actors did not report more intense affect (Affect Intensity Measure) compared to nonactors, $F(1, 51) = 2.68, p = .11$.

Emotion Regulation Questionnaire. Two one-way ANOVAs were conducted to investigate whether actors differed from non-actors in their use of expressive suppression and cognitive reappraisal of emotion. There was a significant effect of group on the frequency of reported use of expressive suppression, $F(1, 48) = 5.15, p = .028$. As predicted, the actor group reported using expressive suppression to regulate their emotions less frequently than did nonactors. There was no effect of group on cognitive reappraisal, $F(1, 48) = 1.34, p = .25$.

Discussion

As predicted, adolescents trained in acting used suppression as an emotion regulation technique less often than did adolescents trained in other art forms. The greater use of suppression by adolescents trained in acting could not be attributed to differences in expressivity or affect intensity because the actors did not score higher on these measures. One possibility is that these results could be due to an effect of acting training, with acting training lessening the tendency to use expressive suppression. However, these results could also be due to a selection bias, with individuals who seek out acting being those who already tend not to use expressive suppression. In an effort to rule out selection bias and come closer to being able to impute a causal relationship, in Study 2 we assessed expressive suppression in a pre-posttest design.

Study 2

Study 2 was designed to test whether selection biases are responsible for the link between acting classes and decreased expressive suppression. We tested this hypothesis by assessing levels of expressive suppression before and after a period of acting vs. visual arts training. Participants in Study 2 were also younger than those who participated in Study 1, and had little formal experience with acting before the intervention. Because suppression is not a very effective way of regulating emotions (because it deals with the outward expression of an emotion

rather than the experience of that emotion), we did not expect many children to select this strategy as their top choice. Still, there might be some children who prefer this strategy to all others, and this may not be to their advantage. We were interested in seeing whether the number of children who make such a selection changes over time as a function of acting training.

If selection biases do not account for lower expressive suppression among actors, we would expect actors to decrease their frequency of expressive suppression over the training period. If lower expressive suppression is a function of selection biases, we would expect actors to show lower suppression scores than nonactors before training begins and for such biases to remain consistent throughout the acting period. We hypothesized that over the course of one year the children in the acting classes would decrease their use of expressive suppression to regulate their emotions, but would not change in their use of other emotion regulation strategies. Because we could not randomly assign participants to conditions, it was important to test whether the groups were equivalent on measures of emotional experience and expression. Therefore, we measured emotionality and expressivity in addition to emotion regulation techniques.

Method

Participants. Participants were children enrolled in either acting classes or visual arts classes after school and on Saturdays. The actor group consisted of 35 children (age range 7yr; 6mo – 10yr; 11mo, *Age* = 9yr; 2mo; 14 males, 21 females) enrolled in acting classes at a private acting school, with 31 completing classes due to attrition. The visual arts classes included 40 children (age range 8yr; 0mo -10yr; 5 mo, *Age* = 8yr; 10mo; 19 males, 21 females) enrolled in visual arts classes at a private art school, with 37 completing classes due to attrition. The children studying acting participated in one sixty-minute class per week taught by professional actors, for three nine-week sessions (27 weeks total). Those studying visual arts participated in

one ninety-minute class per week, taught by professional artists, for three 10-week sessions (30 weeks total). Participants included students who had already signed up for classes, as well as those recruited explicitly for participation in the study¹. Students were given free tuition in return for participation. As in Study 1, participants were part of a larger study investigating the effects of acting training on social-cognitive outcomes (Goldstein & Winner, 2012).

Training. Classes at the beginning of the year involved a variety of improvisation games such as having students observe each other, look away and change two physical characteristics such as untying their shoes, and turn back and guess what had changed. Towards the end of the year, classes involved preparing a short play for presentation. An ethnographic analysis of the classes showed that teachers were mainly focused on teaching physicality and motivating the students, with almost no time spent explicitly on emotion expression or regulation (see Goldstein & Winner, 2012, for a full breakdown of the activities of the classes).

Materials and Procedure. Children completed the *Coping Strategies Interview* (Saarni, 1997) in a private room either at their arts school or at the laboratory once at the beginning of the school year and once at the end of the school year, 10 months later. The experimenter who tested the children was blind to condition.

The *Coping Strategies Interview* is a widely used measure specifically for this age group, chosen because it was age-appropriate and because it provides information on children's attitudes towards various emotion regulation strategies. The experimenter presented children with five stories chosen randomly for each child from 10 possible stories. In each story, the protagonist undergoes a stressful situation (e.g. her pants rip on the playground for everyone to see and laugh at). The child is then given seven options, presented in a random order for each story, of what the protagonist could do: support-seeking (e.g. ask the teacher for help), problem-

solving/ self-reliance (e.g. pull her sweatshirt down and go find new pants at the lost and found), distancing (e.g. ignoring the laughing and pull her sweatshirt down), internalizing (e.g. run home very upset), and externalizing (e.g. yell ‘Shut up!’ at the kids and throw their ball over the fence). We added the options of cognitive reappraisal (e.g. think about her pants ripping as a funny joke) and expressive suppression (e.g. hide her face in her hands so no one could see she was blushing) for each question. As is standard for this measure, children were asked to pick the first and second best options for the protagonist. We counted the number of times (out of 5) a participant chose expressive suppression as the best or second best option. Previous work has shown that children are most likely to choose prosocial emotion regulation strategies, and that this tendency increases with age, but that a subset of children will occasionally choose negative and maladaptive emotion regulation strategies in response to stories (Saarni, 1997).

Children (or their parents) also completed the following three measures of emotionality. As in Study 1, children completed the *Affect Intensity Measure (AIM)*, (Larsen & Deiner, 1987), adapted from the adult measure, and the *Berkeley Expressivity Questionnaire* (Gross & John, 2003). Children answered both the *AIM* and the *BEQ* on a four point Likert Scale (i.e. 1) Almost never 2) Sometimes 3) A lot 4) Always). Children also completed the *WISC-IV* (Wechsler, 1991) vocabulary subtest, a measure of verbal intelligence. This allowed us to control for potential differences in verbal intelligence between groups. Parents completed the *PANAS-X* (Laurent, Catanzaro, Joiner, Rudolph, Potter, Lambert, et al., 1999), where they were asked to rate on a 7-point Likert scale how often their child had felt a variety of positive and negative emotions (e.g. “Sad” “Delighted” “Angry at self”) in the past month.

Control Measures. We used the same control measures as in Study 1.

Results

To determine whether training affected the use of expressive suppression and reappraisal, we conducted a repeated measures ANOVA with group as the between-subjects factor and time as the within-subject factor. To then further investigate whether training was associated with a change in the use of expressive suppression and reappraisal, we conducted follow-up paired sample *t*-tests for each group. We also conducted follow up independent *t*-tests to determine if the groups differed at either time point.

As seen in Table 2, the actor and nonactor groups did not differ in age, gender distribution, or SES (all *F*s < 2). Nor did they differ on parental ratings of positive or negative affect (PANAS), or self-ratings of expressivity (BEQ Positive and Negative) or affect intensity (Affect Intensity Measure) (all *F*s < 2.5), and previous experience with any art form did not predict any outcome measure. The order in which measures were presented had no effect on choices of emotion regulation strategies at either pretest or posttest, for either group.

We ran a repeated measures ANOVA, with Group (actors vs. nonactors) as the between subjects variable and Time (before and after training) as the within-subject variable, with the choice of suppression in the Coping Strategy Stories as the best or second best option (as opposed to any other emotion regulation strategy) as the outcome variable. As predicted, we found a significant Group x Time interaction, $F(1, 65) = 7.25, p = .009$. As shown in Figure 1, actors showed a significant decrease over time in their tendency to select suppression as the best or second best regulation strategy, while nonactors remained stable over time. Tests of simple effects showed that level of suppression declined over time for the actors ($t(31) = 3.23, p = .003$) and did not change over time for the nonactors ($t(36) = 0.49, p = .62$). There was no main effect of group ($F < .5$). Tests of simple effects showed that actors began with higher levels of suppression than non-actors ($t(73) = 2.11, p = .04$) but that there was no significant difference

between groups at Time 2 ($t(65) = 1.50, p = .14$)². There were no main effects or interactions on any other choice in the Coping Strategies Stories: the outcome variables of cognitive reappraisal, support-seeking, problem-solving, distancing, internalizing, or externalizing (all F s < 1.4).

Discussion

These findings replicate those in Study 1. Among the small number of children who chose expressive suppression as the best way to regulate their emotions, those who underwent acting training subsequently used this strategy less. Because the participants in Study 2 were younger than those in Study 1, we can speculate that the link between acting training and expressive suppression may be forged as a result of a relatively small dose of acting training. These findings are consistent with -- but do not provide evidence for -- a causal account. Although participants had taken few or no formal acting or visual arts classes, they were not randomly assigned to training condition, thus precluding us from imputing causality to acting training. The groups were also uneven at pretest, with the acting students having higher levels of suppression than the arts students. Still, it is important to note that groups were matched at pretest on relevant control factors, including verbal IQ, SES, emotional intensity, emotional expressivity and emotional experience.

General Discussion

Expressive suppression is not particularly effective in regulating emotion experience, as it changes the outward expression of emotion, but not the subjective experience of the emotion; (Gross & Levenson, 1993; 1997). Furthermore, it may be harmful when used frequently as an emotion regulation strategy over time, prolonging the experience of suffering and negatively affecting relationship formation, cognitive processes, and even health (Chawla & Ostafin, 2007; Gross & John, 2003; John & Gross, 2004). How could one encourage people to use expressive

suppression less? The present studies point to a context that may discourage the use of suppression – namely, acting. Because acting encourages a positive attitude toward the expression of emotion, both pleasant and unpleasant, we hypothesized that acting might be associated with a decreased use of expressive suppression as a regulation strategy both onstage and in daily life. To begin to explore this hypothesis, we examined, for the first time, emotion regulation in young actors as they go through acting training.

The current studies focused on elementary school children and adolescents. Research on emotion regulation from the perspective of social and clinical psychology has focused mainly on adulthood and old age (e.g. Charles & Carlsensen, 2007; Urry & Gross, 2010). Research on emotion regulation from the perspective of developmental psychology has focused mainly on infancy and the preschool years (e.g. Eisenberg, 2000; Field, 1994). We know comparatively less about strategies of emotion regulation among young children and adolescents. Given the negative effects of expressive suppression on health and well-being, determining how we can decrease the use of expressive suppression in these age groups is critical (even for the small number of children choosing to regulate their emotions via suppression). By focusing on this population rather than adults, we could point to the impact of acting as well as the dynamic nature of emotion regulation at a relatively young age.

In Study 1, we found that by age 13, adolescents with training in acting already use lower levels of suppression than adolescents with training in other art forms. In study 2, among a group of younger children, the chances of choosing expressive suppression as the best way to regulate emotions in hypothetical scenarios decreased over a year of acting training (where such patterns were not found among children who underwent a year of visual arts training). While the measures for the adolescent and elementary school children were not exactly the same, they

converge on a similar conclusion: that acting training may be associated with lower use of or a less positive attitude toward expressive suppression as the best way to regulate negative emotions.

Although we were unable to randomly assign children to acting vs. visual arts classes, we were able to demonstrate that associations between acting and expressive suppression may not be driven by individuals choosing to begin acting classes because of lower levels of expressive suppression. In Study 2, children in acting classes actually began the year of intervention with higher levels of expressive suppression compared to children in other art classes. However, the two groups did not differ at the beginning of the intervention in levels of emotional expression and experience. Nonetheless, unlike the children in visual arts classes, children in acting classes showed a significant decrease in their preference for suppression over the training period. These findings are consistent with the idea that acting training contributes to a decrease in expressive suppression. Another possibility, however, is that children with higher levels of expressive suppression were placed in acting classes because their parents believed that such classes would lessen their use of maladaptive emotion regulation techniques. It is possible that had the students in the visual arts classes also begun the year with higher levels of suppression, they would have experienced a decrease as a result of engaging in arts lessons. Although we find this explanation to be unlikely, the current design does not allow us to rule out this and other potential interpretations of the data that involve preexisting individual differences. Finally, it is possible that other factors such as personality (i.e. students' extraversion or neuroticism of the students), or the types of parents who enroll their children in acting vs. other types of arts classes, may have contributed to group differences in both studies.

Though we found significant links between acting classes and expressive suppression, we did not find significant links with other forms of emotion regulation such as cognitive reappraisal. Acting involves the expression of a wide range of emotions, but acting classes at these age groups do not specify how one might create these emotions to express or even whether the *creation* of such emotions are necessary (Goldstein & Winner, 2012). Therefore, participants in these studies may not have learned how to create emotions to express, only that expression of emotions was a good thing. We also did not find an association between acting training and expressivity. This may seem odd given that actors are often associated with high levels of emotional expression, but realistic, modern acting relies on average every day expressivity, so as to remain as truthful to real life characterizations as possible.

Early healthy emotion socialization is highlighted by acceptance of positive and negative emotions and parents' moderate control of children's expressiveness (Berlin & Cassidy, 2003; Buck, 1984; Denham, 1998; Roberts & Strayer, 1996). The studies reported here are the first to show that a non-parental, external influence may help children and adolescents decrease expressive suppression -- a maladaptive form of emotion regulation. We hope that the present findings will be replicated in a design that involves random assignment of individuals without any previous training to acting vs. other types of arts classes. Such findings will confirm that acting training leads to a decrease in the use of expressive suppression as a prioritized emotion regulation strategy and will build on the present investigation by showing that acting may play a special role in promoting emotional self-expression.

References

- Berlin, L. J., & Cassidy, J. (2003). Mothers' self-reported control of their preschool children's emotional expressiveness: A longitudinal study of associations with infant-mother attachment and children's emotion regulation. *Social Development, 12*, 477-495.
- Buck, R. (1984). *Communication of emotion*. New York: Guilford Publications.
- Butler, E. A., Egloff, B., Wilhelm, F. H., Smith, N. C., Erickson, E. A., & Gross, J. J. (2003). The social consequences of expressive suppression. *Emotion, 3*, 48-67.
doi:10.1037/1528-3542.3.1.48
- Campos, J. J., Campos, R. G., & Barrett, K. C. (1989). Emergent themes in the study of emotional development and emotion regulation. *Developmental Psychology, 25*, 394 - 402.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56*, 267-283.
- Charles S.T., & Carlsensen, L.L. (2007). Emotion regulation and aging. In J.J. Gross (Ed.), *Handbook of emotion regulation*. (pp. 307-327). New York: Guilford Press.
- Chawla, N., & Ostafin, B. (2007). Experiential avoidance as a functional dimensional approach to psychopathology: An empirical review. *Journal of Clinical Psychology, 63*, 871-90.
doi:10.1002/jclp.20400
- Denham, S. A. (1998). *Emotional development in young children*. New York: Guilford Press.
- Eisenberg, N. (2000). Emotion, regulation, and moral development. In S.T. Fiske, D.L. Schacter, & C. Zahn-Waxler (Eds.), *Annual Review of Psychology, 51*, pp. 655-697.

- Field, T. (1994) The effects of mother's physical and emotional unavailability on emotion regulation. *Monographs of the Society for Research in Child Development* 59, 208–27, 250–83.
- Gross, J.J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2(3), 271-299.
- Gross, J.J. (2002). Emotion regulation: affective, cognitive, and social consequences. *Psychophysiology*, 39, 281-291.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85, 348-362. doi:10.1037/0022-3514.85.2.348
- Gross, J. J., & Levenson, R. W. (1993). Emotional suppression: Physiology, self-report, and expressive behavior. *Journal of Personality and Social Psychology*, 64, 970-970.
- Gross, J. J., & Levenson, R. W. (1997). Hiding feelings: The acute effects of inhibiting negative and positive emotion. *Journal of Abnormal Psychology*, 106, 95-103.
- Goldstein, T.R., & Winner, E.** (2012). Enhancing empathy and theory of mind. *Journal of Cognition and Development*, 13, 19-37.. Doi: 10.1080/15248372.2011.573514
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2003). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York: The Guilford Press.
- John, O. P., & Gross, J. J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality*, 72, 1301-1333. doi:10.1111/j.1467-6494.2004.00298.
- Larsen, R. J., & Diener, E. (1987). Affect intensity as an individual difference characteristic: A review. *Journal of Research in Personality*, 21, 1–39.

- Laurent, J., Catanzaro, S.J., Joiner, T.E., Rudolph, K.D., Potter, K.I., Lambert, S., Osborne, L., & Gathright, T. (1999). A measure of positive and negative affect for children: Scale development and preliminary validation. *Psychological Assessment, 11*, 326-338.
- McRae, K., Heller, S.M., John, O.P., Gross, J.J. (2011). Context-dependent emotion regulation: Suppression and reappraisal at the Burning Man festival. *Basic and Applied Social Psychology, 33*, 346-350, DOI:10.1080/01973533.2011.614170.
- Plutchik, R. (1993). Emotions and their vicissitudes: Emotions and psychopathology. In M. Lewis & J. Haviland (Eds.), *Handbook of emotions* (pp. 53–66). New York: Guilford.
- Richards, J. M., & Gross, J. J. (2000). Emotion regulation and memory: The cognitive costs of keeping one's cool. *Journal of Personality and Social Psychology, 79*, 410-424.
- Roberts, W., & Strayer, J. (1996). Empathy, emotional expressiveness, and prosocial behavior. *Child Development, 67*, 449-470.
- Saarni, C. (1997). Coping with aversive feelings. *Motivation and Emotion, 21*, 45-63.
- Soto, J.A., Perez, C.R., Kim, Y., Lee, E.A., & Minnick, M.R. (2011). Is expressive suppression always associated with poorer psychological functioning? A cross-cultural comparison between European Americans and Hong Kong Chinese. *Emotion, 11*, 1450-1455.
- Srivastava, S., Tamir, M., McGonigal, K.M., John, O.P., Gross, J.J. (2009). The social costs of emotional suppression: A prospective study of the transition to college. *Journal of Personality and Social Psychology, 96*, 883-897.
- Thompson, R. A. (1994). Emotion regulation: A theme in search of definition. *Monographs of the Society for Research in Child Development, 59*, 25-52.
- Urry, H. L. & Gross, J. J. (2010). Emotion regulation in older age, *Current Directions in Psychological Science, 19*, 352-357.

Wechsler, D (1991). Manual for the *Wechsler Intelligence Scale for Children*—Third edition, San Antonio, TX: The Psychological Corporation.

Zeman, J., Shipman, K., & Suveg, C. (2002). Anger and sadness regulation: Predictions to internalizing and externalizing symptoms in children. *Journal of Clinical Child and Adolescent Psychology, 31*, 393-398.

Footnotes.

¹ Unfortunately, we were only able to recruit a small number of participants (10 art and 4 acting), and therefore comparisons between those recruited for the study and those who had a preexisting interest in their art form could not be made.

² Because the group of actors began the year with slightly higher (although nonsignificant) scores on negative emotionality (PANAS Negative), affect intensity (AIM) and expressivity (BEQ Positive and Negative), we conducted an additional analysis in which we covaried scores on these measures to ensure that these control measures did not affect our outcomes of interest. None of the covariates were significant, and the group x time interaction remained significant with the same pattern of results as reported.

TablesTable 1. *Descriptive statistics for all measures, Study 1.*

Characteristic/ Test	Actors	NonActors
<i>N</i>	27	25
Mean Age	14yr, 4mo	14yr, 4mo
Mean SES	3.2	4.0
Affect Intensity	4.63 (.73)	4.18 (.82)
Berkeley Expressivity: Positive	5.51 (1.11)	4.99 (1.03)
Berkeley Expressivity: Negative	3.62 (1.12)	3.79 (.91)
Emotion Regulation: Suppression	3.18 (1.27)	3.86 (1.06)
Emotion Regulation: Reappraisal	4.68 (1.31)	4.12 (1.37)

(Standard deviations appear in parentheses).

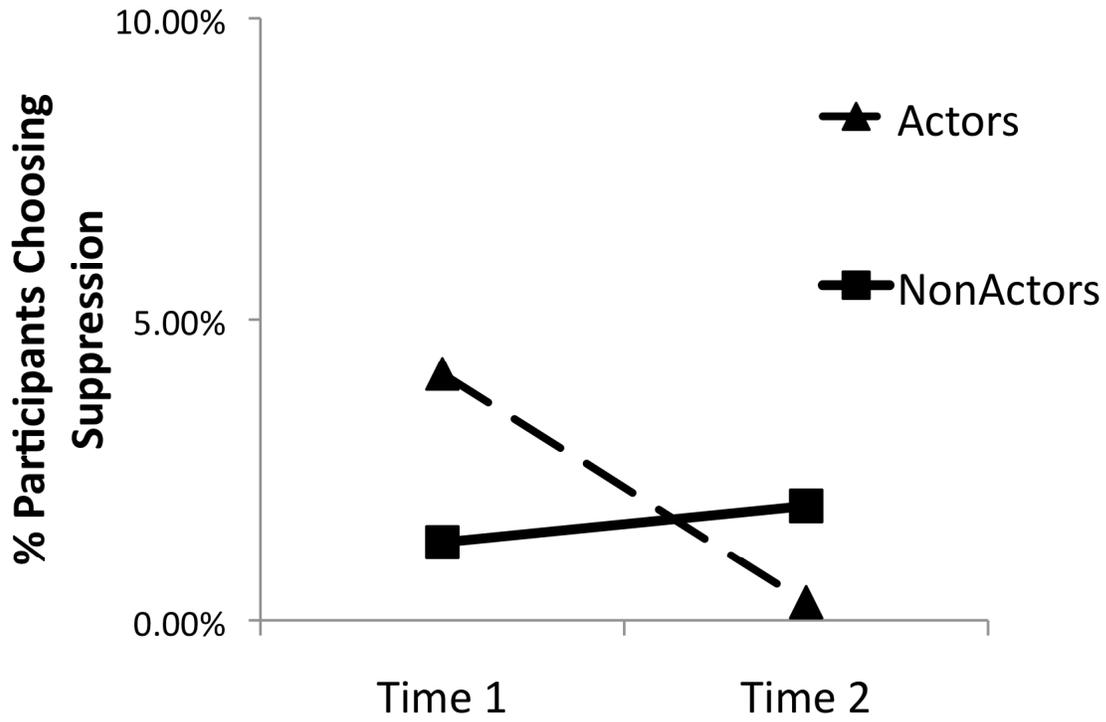
Table 2. *Descriptive statistics for all measures at two time points, Study 2.*

Characteristic/ Test	Actors		NonActors	
	Time 1	Time 2	Time 1	Time 2
<i>N</i>	35	31	40	37
Age	9yr, 2mo	10yr, 0mo	8yr, 10mo	9yr, 8mo
SES	4.16 (.95)	-	4.35 (.82)	-
Positive/Negative Affect	5.49 (.94)	-	5.56 (.65)	-
Scale: Positive				
Positive/Negative Affect	2.05 (.78)	-	1.80 (.58)	-
Scale: Negative				
Affect Intensity	2.71 (.36)	2.81 (.41)	2.59 (.38)	2.65 (.41)
Berkeley Expressivity:	2.83 (.72)	2.87 (.46)	2.59 (.69)	2.79 (.61)
Positive				
Berkeley Expressivity:	2.71 (.54)	2.51 (.41)	2.54 (.50)	2.48 (.48)
Negative				
Coping Stories:	.41 (.62)	.03 (.17)	.13 (.42)	.19 (.57)
Suppression				

(Standard deviations appear in parentheses).

Figures

Figure 1. *Percentage of participants choosing suppression, as a function of group (actors vs. nonactors) and time (before vs. after acting training).*



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