

# Gender Differences in Suppression Based on Type of Emotion

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## Abstract

Current research has explored gender differences in coping, but most research has not focused on coping for specific emotions. The current study assessed gender differences in the use of suppression for three types of emotions: happiness, sadness, and anger. Participants were asked to self-report their use of suppression using the Emotion Regulation Questionnaire (ERQ). In addition, participants were shown short film clips that would potentially elicit the three emotions in a lab room while their faces were videotaped. Participants were assigned to one of five conditions: 1) control condition; 2) suppress thoughts, 3) suppress face; 4) suppress thoughts and face; and 5) think and feel about the emotions shown. Participants were asked to rate how much they attempted to suppress their thoughts and face, and how well they believed they did so. Participants' faces were videotaped while they watched the film clips and their faces were coded for any portrayal of the three emotions. Results indicated that when instructed to suppress thoughts only, women portrayed more anger than men. However, men in the suppress thoughts and face condition displayed more anger during both sad and anger inducing videos than did women. Men in the suppress face condition were more likely to express happiness during anger videos. For both the suppress face and the suppress thoughts and face groups, men believed they were better at suppressing their faces for sad videos than women. However, there were no actual differences in the sad facial displays of men and women in any of the groups. Men were not more likely to suppress emotion overall than women when instructed to do so, or when not instructed to do so. It also appears that men have a particularly difficult time suppressing emotions when they are explicitly told to suppress both their thoughts and their faces. These findings suggest that self-report measures of suppression may not be the most accurate.

## Keywords

Gender, Gender Differences, Emotion Suppression, Emotion Coping

## 1. Introduction

Emotion regulation has been defined as “processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions” (Gross, 1998: p. 275). Coping strategies involve attempts to reduce, tolerate, or redirect stressful experiences (Folkman, 1984). Coping involves both cognitive and behavioral efforts to deal with stressful events and situations (Lazarus, 1999). In Lazarus and Folkman’s (1984) model of coping, coping is categorized into two types: emotion-focused and problem-focused. Emotion-focused coping attempts to reduce negative emotions through strategies such as wishful thinking and self-isolation. Problem-focused coping attempts to change the stressful situation or event through such strategies as problem solving and planning. Skinner et al.’s (2003) model of coping reflects an approach-avoidance classification. Approach coping attempts to eliminate or manage the problem. Avoidance coping attempts to distance oneself from the problem either cognitively and/or physically. Problem-focused and approach coping have been linked to positive health outcomes (Stanojevic et al., 2013; Glass et al., 2009), while emotion-focused and avoidant coping have been linked to negative psychological well-being (Penley et al., 2002; Boals et al., 2011; Littleton et al., 2007). Coping also depends on both the specific situation and on individual differences (Martin et al., 2008; Moos et al., 2006). In current research on emotion coping/regulation, there is debate regarding the most effective way to overcome emotional stress and whether emotions should be expressed or hidden (Mendes et al., 2003; Larsen & Christenfeld, 2011).

One specific type of coping strategy is suppression, which would generally be considered an emotion-focused strategy and/or an avoidance strategy. Suppression is associated with the tendency to hide emotions rather than share them or express them to others (Egloff et al., 2006; Gross & John, 2003). Suppression of emotions has been linked to several negative outcomes including depression (John & Gross, 2004; Flynn et al., 2010), negative social consequences (Gross & John, 2003), and a greater likelihood of experiencing negative emotions (Butler et al., 2007). Suppression has been found to increase negative effects and reduce positive effects in the long term (Boemo et al., 2022). It has also been associated with a series of affective disorders (Aldao & Nolen-Hoeksema, 2010; Ehring et al., 2010) and negative health outcomes, such as cardiovascular disease and cancer (Grossarth-Maticke et al., 1985) and death by any cause (Chapman et al., 2013). Che et al. (2015) found that individuals who scored high in suppression were not able to reduce negative affect through cognitive reappraisal, defined as the ability to reframe an emotional experience, such as thinking of the event as a learning opportunity. Cognitive reappraisal has been associated with positive outcomes, such as better social support and interpersonal functioning (Gross & John, 2003). Despite the generally negative findings for the use of suppression as a coping mechanism, one interesting finding is that men tend to report greater use of suppression than women (Spaapen et al., 2014), yet women report rates of depression and other negative effects at higher rates than men (Nolen-Hoeksema,

2001). One question that the current research has yet to answer adequately is whether men suppressed all emotions more than women or only certain emotions. The goal of the current study is to address this question by specifically examining the ability of men and women to suppress emotions for happiness, sadness, and anger.

### 1.1. Gender Differences in Emotion/Suppression

Levant (2001) has described the socialization “ordeal” where males are constricted by others around them to conform to traditional masculine norms. One feature of the masculine norm is restrictive emotionality, defined as a reluctance to disclose feelings that might indicate vulnerability or weakness (Jansz, 2000). The feminine gender role encourages emotional expression and communication of emotion (Shields, 2002). Research has reported that men who more strongly adhere to the masculine gender role cry less frequently (Ross & Mirowsky, 1984). In contrast, femininity has been associated with increases in crying (Lombardo et al., 2001; Ross & Mirowsky, 1984). Yeh et al. (2009) reported that men and women act differently in social contexts and develop different emotional dispositions. Differences in gender role stereotypes and expectations shape men’s and women’s coping strategies when dealing with the same stressor (Ben-Zur & Zeidner, 1996). For example, Rubio et al. (2016) found that women were more likely to use problem-focused coping for health-related problems, while men were more likely to use avoidance for health-related problems. Hence, socialization differences may lead to gender differences in emotion and how males and females tend to alleviate stress.

In regards to the specific use of suppression as a coping strategy, Haga et al. (2009) argued that the central norms of masculinity include the concept that men are not expected to show as much emotion as women, and hence, are encouraged to suppress their emotions. As a result of this socialization, men may become more skilled than women at using suppression as a coping mechanism. In fact, men have been found to suppress emotions more than women in some studies (Gross & John, 2003; Robichaud et al., 2003; Flynn et al., 2010). However, other studies have found no gender difference in the use of suppression as a coping mechanism (Che et al., 2015).

Beyond the mere frequency of the use of suppression, the question of whether suppression is more effective for men or women has also been addressed. Cai et al. (2016) in an experimental study found that men outperformed women in regulating their negative emotions through the use of expressive suppression. However, Wegner’s (1994) ironic process model of thought suppression argues that attempting to suppress unwanted thoughts may actually lead to an increase in awareness of the various things the individual is trying to avoid. In support of this model, Burns et al. (2010) found that when men and women were told to suppress pain in the cold pressor task, gender differences in pain tolerance were removed, indicating that suppression increased men’s perception of pain, rather than reducing it.

In most studies, the specific type of emotion being suppressed is not specifically assessed. For example, some studies report no gender difference in subjective feelings of anger (Archer, 2004; Campbell, 2006), while others find that women report more frequent anger (Fischer et al., 2004). However, men do engage in more physical and verbal aggression (Archer, 2004; Bettencourt & Miller, 1996). Little research though has explored gender differences in the suppression of anger. One study that has addressed this issue is Kwon et al. (2013) who reported that women were more likely to suppress anger than were men in both American and Korean samples. In addition, Fischer and Evers (2011) found that women reported expecting more negative social appraisals for anger expressions than men; however, the findings were only true for women in traditional vs. egalitarian relationships. Shields (2002) has suggested that women may doubt their entitlement to anger, as it conflicts with women's traditional role. As for sadness, Santiago-Menendez and Campbell (2013) found that males reported experiencing sadness less often than females. However, whether they are truly experiencing less sadness or if they are suppressing sad feelings and denying these feelings is not clear.

In general, research is only beginning to assess the use of suppression for particular emotions and how this use of suppression may differ for males and females. One reason for some of the contradictory findings in the literature may be due to the fact that most studies do not control for the type of emotion being suppressed. If the type of emotion matters, then studies that do not control for type of emotion, but rather include multiple emotions, may report no gender difference.

## 1.2. The Current Study

Gender researchers have articulated the need to move beyond simple documentation of gender differences and to instead focus on the question of when differences are most/least likely to arise (Brody & Hall, 2008). The current study's goal was to examine the use of suppression in men and women for specific emotions. The emotions examined were happiness, sadness, and anger. Given the findings of Kwon et al. (2013), it was expected that women would be more likely to suppress anger. Socialization processes would support this expectation in that it is more acceptable for men to express anger than women (Shields, 2002). Likewise, it was expected that men would be more likely to suppress sadness than women, given the social standard that men don't cry (Ross & Mirowsky, 1984). Happiness was included as a control emotion with no expectation for a gender difference. There is no societal reason why one sex should be more likely than the other to express happiness, and well is no general expectation to hide one's happiness.

## 2. Method

### 2.1. Participants

Participants in the study consisted of 348 undergraduate students (206 female) at

a mid-sized university in the upper-Midwest who participated as part of a class experimental participation requirement. Based on sample size calculations, 238 participants would be needed for a 95% confidence interval and a 5% margin of error. We sampled over this amount given the known fact that more females are in the classes that utilize the participant pool than males and additional data would be needed to reach an acceptable number of male participants for gender comparison analyses. No participants were excluded. The average age of participants was 19.07 (range 18 - 30). The majority of participants were Caucasian (87%), with 3.7% Asian, 2.6% African American, 2.3% Hispanic, 0.9% Native American, and 3.4% identifying as multiracial or other.

## 2.2. Measures and Procedure

A previous study was conducted to determine which of fifteen different videos best reflected three emotions (anger, sadness, and happiness) most consistently among participants. There were five videos in each of the three categories of emotion that were narrowed down to two videos in each category based on participant responses. Camatasia 2 was used to edit the six videos to remove any confusing or irrelevant story lines and to ensure that only the emotion-evoking moments of the video were included. Individual video clips ranged in length from 2:11 to 3:24 minutes. Videos came from movies, television series, and real footage of live events. Specific information on videos is available from the author upon request. The order of the video clips was randomized based on the emotion they reflected. In other words, some participants viewed the two video clips reflecting sadness first, the two reflecting anger second, and the two reflecting happiness third; others viewed the two clips reflecting anger first, and so on. The two videos for each emotion were always paired together and shown in the same order. A piece of colored paper was held up in front of the camera for a brief moment before each emotion section was played to inform coders what video each participant was watching and reacting to. A different color was used to reflect the different emotions. Participants and coders were not aware of the meaning of the colors to the videos they were watching.

For the current study, all human data were performed in accordance with the Declaration of Helsinki. The study was approved by the South Dakota State University Ethics Committee (IRB-1704004-EXP). At the beginning of the study, participants were asked to complete an informed consent. Then, each participant was asked to provide basic demographic information. Next, participants completed the Emotion Regulation Questionnaire (ERQ) (Gross & John, 2003), which consists of 10 questions rated on a 7-point Likert scale ranging from 1 strongly disagree to 7 strongly agree. The ERQ consists of two scales: reappraisal and suppression. The suppression scale consists of four items (Cronbach's  $\alpha = 0.760$ ). Sample questions from this scale include, "I keep my emotions to myself" and "I control my emotions by not expressing them." The cognitive reappraisal scale was not used in the current study.

After surveys were completed, participants were randomly assigned to one of five groups. The first group was the control group, where participants were told to watch the video clips with no additional instructions. The second group was the thought suppression group, where participants were told to suppress their thoughts about the emotions presented in the video clips. The third group was the facial suppression group, where participants were told to refrain from showing any facial expressions while watching the video clip. The fourth group was the full suppression group, where participants were told to suppress both their thoughts and facial expressions while watching the video clips. The fifth group was the expression group, where participants were told to really think about the emotions involved in the videos and feel free to show emotion to the video clips.

Prior to viewing the first video, instructions were provided to participants depending on the group they were assigned to. Participants were also told that a brief pause of 30 seconds would occur between videos to allow participants time to collect their thoughts and prepare for the next video. During this time, the participant was asked to rate how much they tried to suppress their thoughts and their facial expressions and to rate how effective they felt they were in suppressing their thoughts and facial expressions. Participants ratings for both their attempts to suppress and how well they suppressed their thoughts and faces were summed for each type of emotion.

A hand-held video camera was mounted on a tripod in a position to capture the participants' face and upper body while they watched the videos on a computer screen. The purpose of videotaping the participants was to objectively rate the participant's ability to suppress facial displays of emotion. Following participation, coders used event sampling to determine whether the participants were expressing anger, sadness, or happiness during each section of the video. The total frequency of each emotion expressed during each type of video (anger video, sad video, happy video) was tallied. Two coders rated each video and all discrepancies were discussed until a consensus was reached.

### 2.3. Data Analysis

Analyses were conducted using SPSS version 29. The baseline suppression score was used as a control variable in analysis. **Table 1** presents the means and standard deviations for baseline suppression, self-reported thought suppression for each emotion (happy, sad, anger), how well the participant thought they achieved thought suppression, self-reported facial suppression for each emotion, how well the participant felt they achieved facial suppression, and the amount of each emotion exhibited through video analysis while watching each type of emotion videos for men and women. First, a series of 2 gender x 5 manipulation analysis of variance tests were conducted for all self-reported thought suppression, facial suppression, and facial coding of emotion variables to assess the effects of the manipulation and gender for suppression across emotions. Next, participants in the three suppression conditions were used in a series of multiple regression analyses to assess the ability of gender to predict facial expression for each type

of emotion, again with baseline suppression being included as a control variable. All data, analysis code, and research materials are available at OSF | “Gender Differences in Suppression Based on Type of Emotion”. This study’s design and its analysis were not pre-registered.

**Table 1.** Means and standard deviations for all dependent variables for men and women.

	Men	Women
ERQ Suppression	17.32 (4.17)	14.3 (4.65)**
Self-rate attempt to suppress happy thoughts	4.96 (2.59)	5.40 (2.83)
Sad thoughts	5.91 (2.36)	5.82 (2.48)
Angry thoughts	5.56 (2.34)	5.72 (2.59)
Self-rate ability to suppress happy thoughts	5.51 (2.45)	5.98 (2.67)
Sad thoughts	6.09 (2.15)	5.77 (2.33)
Angry thoughts	5.60 (2.20)	5.60 (2.36)
Self-rate attempt to suppress happy facial expressions	5.42 (4.21)	5.70 (2.87)
Sad facial expressions	5.75 (2.50)	5.93 (2.64)
Angry facial expressions	5.64 (2.49)	5.89 (2.76)
Self-rate ability to suppress happy facial expressions	5.41 (2.39)	5.85 (2.71)
Sad facial expressions	6.04 (2.38)	5.96 (2.42)
Angry facial expressions	5.68 (2.34)	5.80 (2.56)
Happy Video 1—Happy facial expressions	0.80 (1.39)	0.93 (1.50)
Sad facial expressions	0.58 (1.14)	0.52 (1.26)
Angry facial expressions	0.36 (0.95)	0.53 (1.21)
Happy Video 2—Happy facial expressions	2.82 (2.02)	2.34 (2.20)*
Sad facial expressions	0.30 (0.70)	0.32 (0.98)
Angry facial expressions	0.45 (0.96)	0.47 (1.09)
All Happy Videos—Happy facial expressions	3.58 (2.87)	3.27 (3.22)
Sad facial expressions	0.88 (1.53)	0.83 (1.98)
Angry facial expressions	0.80 (1.46)	0.99 (1.84)
Sad Video 1—Happy facial expressions	0.31 (0.73)	0.25 (0.64)
Sad facial expressions	1.20 (1.52)	1.84 (1.99)**
Angry facial expressions	0.63 (1.25)	0.40 (1.03)
Sad Video 2—Happy facial expressions	0.25 (0.71)	0.10 (0.44)*
Sad facial expressions	1.34 (1.67)	1.19 (1.81)
Angry facial expressions	0.96 (1.40)	1.24 (1.91)
All Sad Videos—Happy facial expressions	0.60 (1.12)	0.40 (1.09)

**Continued**

Sad facial expressions	2.50 (2.56)	3.03 (3.20)
Angry facial expressions	1.57 (2.29)	1.64 (2.58)
Angry Video 1—Happy facial expressions	1.13 (1.63)	0.63 (1.16)***
Sad facial expressions	1.15 (1.55)	1.14 (2.12)
Angry facial expressions	1.78 (2.15)	2.01 (2.33)
Angry Video 2—Happy facial expressions	0.18 (0.58)	0.10 (0.49)
Sad facial expressions	1.85 (1.87)	1.76 (2.40)
Angry facial expressions	1.85 (2.29)	1.74 (2.35)
All Angry videos—Happy facial expressions	1.32 (1.89)	0.72 (1.29)***
Sad facial expressions	2.99 (2.80)	2.89 (3.93)
Angry facial expressions	3.55 (3.84)	3.75 (4.26)

Note. \*indicates significant gender difference at  $*p < 0.05$ ,  $**p < 0.01$ ,  $***p < 0.001$ .

**3. Results**

A t-test was conducted to assess gender differences in suppression based on the ERQ. Results found that men ( $M = 17.32$ ,  $SD = 4.17$ ) were more likely to suppress emotion than women ( $M = 14.3$ ,  $SD = 4.65$ ),  $t = 6.15$ ,  $p < 0.001$ .

Several ANOVAs were conducted to assess the effect of participant sex and effect of manipulation on participants self-reported attempts to suppress and ability to suppress and their actual expressions of happiness, sadness, and anger during all of the videos. Suppression scores were used as a covariate.

Only one significant interaction was found and it was for actual facial expressions across anger videos,  $F(4, 336) = 3.24$ ,  $p = 0.01$ ,  $\eta^2 = 0.04$ . When told to suppress thoughts, females ( $M = 6.41$ ,  $SD = 4.78$ ) displayed more angry faces than males ( $M = 3.38$ ,  $SD = 3.2$ ). However, when told to suppress thoughts and faces, males ( $M = 3.63$ ,  $SD = 4.77$ ) displayed more angry faces than females ( $M = 1.65$ ,  $SD = 2.68$ ).

Seven main effects of gender occurred:

1) For happy videos, men ( $M = 2.82$ ,  $SD = 2.02$ ) displayed more happy faces while watching the second happy video than women ( $M = 2.34$ ,  $SD = 2.20$ ),  $F = 4.44$ ,  $p < 0.05$ ,  $\eta^2 = 0.03$ .

2) For sad videos, men ( $M = 0.31$ ,  $SD = 0.74$ ) displayed more happy faces while watching the first sad video than did women ( $M = 0.24$ ,  $SD = 0.64$ ),  $F = 3.44$ ,  $p < 0.05$ ,  $\eta^2 = 0.02$ . Women ( $M = 1.84$ ,  $SD = 1.98$ ) displayed more sad faces than did men ( $M = 1.19$ ,  $SD = 1.52$ ) while watching the first sad video,  $F = 4.55$ ,  $p < 0.05$ ,  $\eta^2 = 0.03$ . Men ( $M = 0.25$ ,  $SD = 0.71$ ) displayed more happiness while watching the second sad video than did women ( $M = 0.10$ ,  $SD = 0.44$ ),  $F = 4.61$ ,  $p < 0.05$ ,  $\eta^2 = 0.03$ . Across both sad videos, men ( $M = 0.57$ ,  $SD = 1.09$ ) displayed more happiness than did women ( $M = 0.39$ ,  $SD = 1.09$ ),  $F = 3.72$ ,  $p < 0.05$ ,  $\eta^2 = 0.002$ .



3) For angry videos, men ( $M = 1.15$ ,  $SD = 1.64$ ) displayed more happiness during the first anger video than did women ( $M = 0.62$ ,  $SD = 1.16$ ),  $F = 6.81$ ,  $p < 0.01$ ,  $\eta^2 = 0.04$ . Men ( $M = 1.34$ ,  $SD = 1.90$ ) displayed more happiness across both anger videos than did women ( $M = 0.72$ ,  $SD = 1.29$ ),  $F = 8.18$ ,  $p < 0.001$ ,  $\eta^2 = 0.05$ .

Several analyses found a main effect for manipulation:

1) attempt to suppress thoughts for happy videos,  $F = 21.20$ ,  $p < 0.001$ ,  $\eta^2 = 0.20$ ; sad videos,  $F = 20.73$ ,  $p < 0.001$ ,  $\eta^2 = 0.20$ ; and angry videos,  $F = 21.44$ ,  $p < 0.001$ ,  $\eta^2 = 0.21$ . The control group was least likely to suppress thoughts for sad and angry videos, the suppress thoughts group was least likely to suppress for happy videos.

2) how well participants felt they suppressed their thoughts for happy videos,  $F = 27.48$ ,  $p < 0.001$ ,  $\eta^2 = 0.25$ ; sad videos,  $F = 20.12$ ,  $p < 0.001$ ,  $\eta^2 = 0.20$ ; and angry videos,  $F = 20.45$ ,  $p < 0.001$ ,  $\eta^2 = 0.20$ . Participants in the control group and suppress thoughts group reported lower levels of ability to suppress thoughts for happy and angry videos, the suppress thoughts group reported the lowest ability to suppress thoughts for the sad videos.

3) attempt to suppress facial expressions for happy videos,  $F = 16.45$ ,  $p < 0.001$ ,  $\eta^2 = 0.17$ ; sad videos,  $F = 20.41$ ,  $p < 0.001$ ,  $\eta^2 = 0.20$ ; and angry videos,  $F = 22.45$ ,  $p < 0.001$ ,  $\eta^2 = 0.21$ . The control group was least likely to report attempting to suppress their face for sad and angry videos, the suppress thoughts group was least likely to report attempting to suppress their face for the happy videos.

4) how well participants felt they suppressed their facial expressions for happy videos,  $F = 25.70$ ,  $p < 0.001$ ,  $\eta^2 = 0.24$ ; sad videos,  $F = 24.46$ ,  $p < 0.001$ ,  $\eta^2 = 0.23$ ; and angry videos,  $F = 30.84$ ,  $p < 0.001$ ,  $\eta^2 = 0.27$ . The suppress thoughts group reported the least ability to suppress their face for the happy and sad videos, both the suppress thoughts and control group reported the least ability to suppress their face for the angry videos.

5) for the happy videos, facial displays of happiness for the first happy video,  $F = 13.12$ ,  $p < 0.001$ ,  $\eta^2 = 0.14$ ; the second happy video,  $F = 20.29$ ,  $p < 0.001$ ,  $\eta^2 = 0.20$ ; and across both happy videos,  $F = 24.88$ ,  $p < 0.001$ ,  $\eta^2 = 0.24$ . For the first video, the think and feel group showed the most happy expression and the suppress thoughts and face group showed the least; for the second video, the control group and the suppress thoughts and face group showed the most happy expression, with all other groups equal; across both videos, the control group showed the most happiness, and the suppress thoughts and faces group showed the least.

6) for the sad videos, facial displays of sadness for the first sad video,  $F = 2.93$ ,  $p < 0.05$ ,  $\eta^2 = 0.04$ ; facial displays of happiness for the second sad video,  $F = 4.61$ ,  $p < 0.05$ ,  $\eta^2 = 0.03$ ; facial displays of happiness across both sad videos,  $F = 2.82$ ,  $p < 0.05$ ,  $\eta^2 = 0.03$ ; and facial displays of anger across both sad videos,  $F = 3.13$ ,  $p < 0.05$ ,  $\eta^2 = 0.04$ . For the first video, the control group and the suppress face group showed the most sadness, with all other groups being equal; for the second video, the control group showed the most happiness, while the suppress thoughts

and face group showed the least; across both sad videos, the control group showed the most happiness, while the suppress thoughts group showed the least, and for anger, the suppress face group and suppress thoughts and face group showed the most anger, with the suppress thought group showing the least.

7) for the angry videos, facial displays of happiness for the first angry video,  $F = 6.38$ ,  $p < 0.001$ ,  $\eta^2 = 0.07$  and anger for the first video,  $F = 6.97$ ,  $p < 0.001$ ,  $\eta^2 = 0.08$ ; facial displays of happiness across both angry videos,  $F = 4.67$ ,  $p < 0.01$ ,  $\eta^2 = 0.06$  and anger for both angry videos,  $F = 6.98$ ,  $p < 0.001$ ,  $\eta^2 = 0.08$ . For the first video, happiness was shown most by those in the suppress thoughts condition and least by those in the suppress face and thoughts condition, while for angry facial displays again it was those in the suppress thoughts condition that showed the most anger, with all other groups being equal; across both angry videos, happiness was shown most by those in the suppress face condition and the think and feel condition and least by those in the suppress face and thoughts condition, while for anger, the suppress thoughts condition showed the most anger, with the suppress face condition showing the least.

In general, participants reported trying to suppress their thoughts and faces more and thought they were better at doing so if they were in the suppress face, suppress thoughts and face, and ironically in the feel free to think and show emotion condition than if they were in the suppress thoughts and control condition. In terms of actual displays of emotion, happiness was shown most by those in the suppress thoughts and face condition, the feel free to think and show condition, and the control condition. For sadness, the control condition, the suppress face condition, and the suppress thoughts and face condition were the most likely to show sadness. Lastly, for anger, the suppress thoughts condition, suppress face condition, and the feel free to think and show condition displayed the most angry faces.

Next, a series of regression analyses were conducted to assess the ability of gender to predict each of the dependent variables in each of the three suppression conditions (suppress thoughts, face, and both). Baseline suppression scores on the ERQ were entered on step 1 and participant gender was entered on step 2.

1) For the suppress thoughts condition, participant gender significantly predicted angry facial displays across both happy videos,  $r^2 = 0.09$ ,  $F$  change = 4.23,  $p < 0.05$ , (CI sex = 0.02 - 2.04), for the second sad video,  $r^2 = 0.10$ ,  $F$  change = 5.15,  $p < 0.05$ , (CI sex = 0.14 - 2.32), for the first angry video,  $r^2 = 0.16$ ,  $F$  change = 8.93,  $p < 0.01$ , (CI sex = 0.65 - 3.31), and across both angry videos,  $r^2 = 0.12$ ,  $F$  change = 6.23,  $p < 0.05$ , (CI sex = 0.59 - 5.52). In all cases, women displayed more angry faces than men for the videos.

2) For the suppress face condition, participant gender significantly predicted how well the participant believed they suppressed their thoughts during happy videos,  $r^2 = 0.06$ ,  $F$  change = 4.00,  $p = 0.05$ , (CI sex = 0.00 - 2.39). Women believed they suppressed their thoughts better than men. Participant gender significantly predicted how well the participant believed they suppressed their face

during sad videos,  $r^2 = 0.08$ ,  $F$  change = 4.12,  $p < 0.05$ , (CI sex =  $-2.76 - -0.02$ ). Men felt they suppressed their faces better than women. Participant gender predicted the amount of happiness displayed during the first angry video,  $r^2 = 0.07$ ,  $F$  change = 4.14,  $p < 0.05$  (CI sex =  $-1.88 - -0.02$ ), during the second angry video,  $r^2 = 0.13$ ,  $F$  change = 7.37,  $p < 0.01$ , (CI sex =  $-0.89 - -0.13$ ), and across both angry videos,  $r^2 = 0.11$ ,  $F$  change = 7.29,  $p < 0.01$ , (CI sex =  $-2.54 - -0.38$ ). Men displayed more happiness than did women during these videos.

3) For the suppress thoughts and faces condition, participant gender predicted participants self-rated success at suppressing sad thoughts,  $r^2 = 0.06$ ,  $F$  change = 3.98,  $p = 0.05$ , (CI sex =  $-1.79 - 0.00$ ). Men thought they suppressed their sad thoughts more than did women. Gender predicted how well participants felt they suppressed their faces for happy videos,  $r^2 = 0.09$ ,  $F$  change = 5.16,  $p < 0.05$ , (CI sex =  $0.15 - 2.36$ ). Women felt they were better at suppressing their happy faces than did men. Gender predicted the amount of actual happy expressions during the second happy video,  $r^2 = 0.13$ ,  $F$  change = 9.92,  $p < 0.01$ , (CI sex =  $-2.60 - -0.58$ ) and across both happy videos,  $r^2 = 0.14$ ,  $F$  change = 9.58,  $p < 0.01$ , (CI sex =  $-2.89 - -0.62$ ). Men portrayed more happy facial expressions than did women. Gender predicted the amount of angry facial displays for the first sad video,  $r^2 = 0.10$ ,  $F$  change = 6.59,  $p < 0.05$ , (CI sex =  $-1.15 - -0.14$ ), the second sad video,  $r^2 = 0.08$ ,  $F$  change = 4.62,  $p < 0.05$ , (CI sex =  $-1.44 - -0.05$ ), and across both sad videos,  $r^2 = 0.10$ ,  $F$  change = 5.96,  $p < 0.05$ , (CI sex =  $-2.21 - -0.22$ ). Men displayed more anger than did women while watching sad videos. Gender predicted anger displays for the first angry video,  $r^2 = 0.08$ ,  $F$  change = 5.13,  $p < 0.05$ , (CI sex =  $-2.00 - -0.13$ ) and across both anger videos,  $r^2 = 0.07$ ,  $F$  change = 4.87,  $p < 0.05$ , (CI sex =  $-3.71 - -0.19$ ). Men displayed more anger than did women while watching anger videos. Overall, men were more likely to portray emotion in this condition than were women. They portrayed more happiness during happy videos and more anger during sad and angry videos.

#### 4. Discussion

Based on current Western socialization practices, it was expected that women would be more likely to suppress anger and that men would be more likely to suppress sadness than women. There was only partial support for the idea that women suppress anger more than men. In the suppress thoughts condition, women showed more angry facial displays when watching all types of videos than did men. However, perhaps because women in this condition were only told to suppress thoughts, they felt able to display angry facial expressions while watching videos. Women in the suppress face condition and suppress thoughts and faces condition did not display more anger than did men. In contrast, men in the suppress thoughts and face condition displayed more anger during both sad and anger inducing videos than did women. As mentioned previously, Wegner's (1994) ironic process model of thought suppression argues that attempting to suppress unwanted thoughts may actually lead to an increase in awareness of the

vary thing the individual is trying to avoid. Likewise, Burns et al. (2010) found that when men were told to suppress pain in the cold pressor task, suppression increased men's perception of pain, rather than reducing it. These findings may explain why men showed more facial expressions of anger when told to suppress both their thoughts and their faces while watching the videos.

There was also some support for the idea that men would be more likely to suppress sadness. For both the suppress face and the suppress thoughts and face groups, men believed they were better at suppressing their face for sad videos than were women. However, there were no actual differences in the sad facial displays of men and women in any of the groups. Hence, while men may believe they are better at suppressing sadness, they may not be accurate in that assessment. Interestingly though, in the suppress thoughts and face condition, men were more likely to show anger during the sad videos than were women. Men may try to deal with sadness by replacing it with a more acceptable male emotion, anger.

One interesting finding was that men in the suppress face condition were more likely to express happiness during anger videos. It is unlikely that the videos would have actually made men happy. It is more likely that this was a strategy to suppress the negative emotion(s) more likely elicited, by exhibiting the opposite emotion than the one felt.

The fact that men self-report greater suppression of emotion, as found in many studies including the current one, should be somewhat suspect. Men were not more likely to suppress emotion overall than women when instructed to do so, or when not instructed to do so. It also appears that men have a particularly difficult time suppressing emotions when they are explicitly told to suppress both their thoughts and their faces.

Past research has related suppression to negative outcomes, such as depression (John & Gross, 2004; Flynn et al., 2010). At the same time, this finding has always been a bit of a conundrum, as men self-report higher use of suppression, but women have higher rates of depression. The current study may shed some light on this problem; specifically, in that men may overreport their actual use of suppression. In addition, it may be the particular emotion that one is trying to suppress that may relate more to depression. When told to suppress their faces or both thoughts and faces, men were actually worse at suppressing anger. However, perhaps that is a good thing. Women may hold in anger instead of expressing it, which may in turn lead to feelings of depression.

## 5. Limitations and Future Directions

One limitation of the current study was that the participants were primarily Caucasian and were young adults. The findings may not be the same for different ethnic groups or for individuals of different ages. For example, some research reports that older adults use expressive suppression less frequently than do younger adults (John & Gross, 2004). Hence, these findings may be less ap-

plicable to older individuals. As for ethnicity, Gross and John (2003) compared European American, African American, Asian American, and Latinos for differences in suppression and found that European Americans used the least suppression, with no differences between the other groups. Therefore, future research should explore the intersection of gender, age, and ethnicity in order to create a more complete picture of the role of suppression in regulating emotion. Second, while the videos used in the study were pre-assessed through a pilot study, it is possible that the videos did not adequately inspire the desired emotions in participants. And of course, not everyone will react to the same stimuli in the same way. What one person finds sad, another may not be moved by. We attempted to address this situation by having two videos for each desired emotion with the hope that at least one of them would resonate with the participant in the desired manner. In addition, we only examined three emotions: happiness, sadness, and anger. It would be fruitful for future research to include more emotions, particularly fear, as well as more complex emotions.

Thirdly, the current study was conducted in an artificial setting. Participants were asked to watch short clips of movies or other film clips, without the full context of the story or events involved with those clips. They were also watching these clips in a lab room while being videotaped; all of which may lead to emotional responses that differ from those in the real world. At the same time, it should be noted that collecting real world observational data of emotions is challenging, particularly if one is interested in assessing a variety of emotions. While one can imagine some events that would likely lead to emotional displays, such as a funeral or wedding, it would likely be deemed inappropriate to conduct research in these settings or difficult to obtain permission to view people unobtrusively, especially for the more upsetting scenarios, such as a funeral. Collecting emotional data from more mundane observational settings, such as individuals walking down a street, in a restaurant or bar, or on a sporting field has its own difficulties in that the frequency of emotional displays would be more limited, and hence the data collection period might be lengthy. However, despite these difficulties, it would be warranted to encourage future research in more realistic settings.

## 6. Conclusion

The current research expands our knowledge of the role of gender in shaping how suppression is used or not used. It isn't simply a matter of men suppressing more than women, rather the specific emotion involved also plays a role. Also, the current study attests to the fact that self-report data may not be the most reliable when it comes to actual suppression, or at least facial suppression specifically, as men appear to overreport their suppression. Future research should explore other emotions and the use of suppression in other contexts.

## Conflict of Interest Declaration

I wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work

that could have influenced its outcome. I confirm that there are no other persons who satisfy the criteria for authorship but are not listed. I confirm that I have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property. In so doing, I confirm that I have followed the regulations of our institution concerning intellectual property. I further confirm that any aspect of the work covered in this manuscript that has involved human participants has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

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