

Emotion Regulation and Psychopathology: The Role of Gender

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Abstract

This review addresses three questions regarding the relationships among gender, emotion regulation, and psychopathology: (a) are there gender differences in emotion regulation strategies, (b) are emotion regulation strategies similarly related to psychopathology in men and women, and (c) do gender differences in emotion regulation strategies account for gender differences in psychopathology? Women report using most emotion regulation strategies more than men do, and emotion regulation strategies are similarly related to psychopathology in women and men. More rumination in women compared to men partially accounts for greater depression and anxiety in women compared to men, while a greater tendency to use alcohol to cope partially accounts for more alcohol misuse in men compared to women. The literature on emotion regulation is likely missing vital information on how men regulate their emotions. I discuss lessons learned and questions raised about the relationships between gender differences in emotion regulation and gender differences in psychopathology.

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INTRODUCTION

Emotion dysregulation is increasingly being viewed as central to several types of psychopathology (see chapters in Gross & Thompson 2007, Kring & Sloan 2010). Disturbances in emotion regulation have been implicated in depression and anxiety disorders (Campbell-Sills & Barlow 2007, Gross & Munoz 1995, Mennin et al. 2007, Nolen-Hoeksema et al. 2008), borderline personality disorder (Linehan 1993, Lynch et al. 2007), eating disorders (Fairburn et al. 1995, McCarthy

1990, Polivy & Herman 2002), and alcohol abuse (Sher & Grekin 2007, Tice et al. 2001).

Each of the disorders in which deficits in emotion regulation are implicated shows substantial gender differences in prevalence. Specifically, women are significantly more likely than men to be diagnosed with unipolar depression (Kessler et al. 2007), all of the anxiety disorders except obsessive-compulsive disorder (McLean & Anderson 2009), borderline personality disorder (Lenzenweger 2008), and eating disorders (Striegel-Moore et al.

Emotion regulation:

activities that allow an individual to monitor, evaluate, and modify the nature and course of an emotional response

2003). Men are more likely than women to be diagnosed with alcohol-related disorders (Keyes et al. 2008).

In turn, gender differences have been documented in a number of emotion-related processes, including in specific emotion regulation strategies (Feingold 1994, Hall 1978, McClure 2000, Nolen-Hoeksema & Aldao 2011, Nolen-Hoeksema et al. 2008, Tamres et al. 2002). Some theorists have suggested that gender differences in emotion regulation may contribute to the gender differences in certain types of psychopathology (Hyde et al. 2008, Nolen-Hoeksema 1991, Zahn-Waxler et al. 2008).

Below I briefly review theories of emotion regulation and evidence that specific regulatory strategies are linked to psychopathology. Then I address three questions regarding the relationships among gender, emotion regulation, and psychopathology: (a) are there gender differences in the tendencies to use certain strategies; (b) are emotion regulation strategies similarly related to psychopathology in men and women; and (c) do gender differences in emotion regulation strategies account for gender differences in certain psychopathologies (particularly depression, anxiety, and alcohol abuse)? Finally, I discuss lessons learned and questions raised about the relationships between gender differences in emotion regulation and gender differences in psychopathology. I also explicate how examination of gender differences in emotion regulation informs general theories and research on the nature of emotion regulation and its relationship to psychopathology.

EMOTION REGULATION AND PSYCHOPATHOLOGY

The term “emotion regulation” has been used to refer to the range of activities that allow an individual to monitor, evaluate, and modify the nature and course of an emotional response, in order to pursue his or her goals and appropriately respond to environmental demands (Cole et al. 2004, Eisenberg & Spinrad 2004, Gross 1998, Johnson et al. 2010, Thompson 1994). Emotion-eliciting events may be external to the

individual, such as the sudden appearance of a dangerous snake (LeDoux 2000), or internal, in the form of memories, imagined scenarios, predictions about the future, interpretations, or beliefs (Williams 2010). Goals may be either immediate (e.g., avoiding being bitten by the snake) or long term (fulfilling career aspirations). Theorists differ as to whether they view emotion regulation as distinct from emotion generation or emotional reactivity, with some defining emotion regulation as separate from the process of emotion generation (Eisenberg et al. 2007, Gross & Thompson 2007, Rottenberg & Gross 2003) and others arguing that an experienced emotion and its regulation are in many ways indistinguishable (see Campos et al. 2004, Derryberry & Rothbart 1997, Lewis et al. 2010). For the bulk of this review, I discuss emotion regulation strategies as distinct from the experience of emotion, but I eventually return to a discussion of the interrelatedness of the experience and regulation of emotion (see also the review by Gross & Barrett 2011).

Over the years, different theoretical models have highlighted different specific strategies as adaptive or maladaptive (for a full review, see Aldao et al. 2010). A number of theories suggest that psychopathology can result from the inability to downregulate negative emotions through strategies such as reappraisal, acceptance, problem-solving, or attentional redeployment. Reappraisal involves finding benign or positive attributions or interpretations of an event to prevent or reduce negative mood about the event (Gross 1998). Acceptance involves acknowledging one’s emotions without judging them (Hayes et al. 1996). Problem-solving involves active attempts to overcome or prevent a problem (Billings & Moos 1981). Attentional redeployment involves diverting one’s attention to positive or benign stimuli to change one’s mood (e.g., averting one’s gaze from a frightening scene; Eisenberg et al. 2007, Gross 1998, Kochanska et al. 2000, Rothbart & Bates 2006). Emotion regulation theories of psychopathology argue that the inability to use these strategies to

Reappraisal: finding benign or positive attributions or interpretations of an event to prevent or reduce negative mood about the event

Acceptance: acknowledging one’s emotions without judging them

Problem-solving: active attempts to overcome or prevent a problem to reduce distress

Attentional redeployment: diverting one’s attention to positive or benign stimuli to change one’s mood

Rumination: a perseverative focus on one's negative emotions and the causes and consequences of them, without engaging in problem-solving

Suppression: consciously or nonconsciously trying to push negative thoughts and feelings from awareness

Avoidance: behavioral or cognitive attempts to get away from distressing thoughts or situations

downregulate leads to negative emotions that are more uncontrollable, severe, and chronic and likely develop into psychopathology (Campbell-Sills & Barlow 2007, Gross & John 2003, Linehan 1993, Mennin et al. 2005).

Consistent with these theories, difficulties in reappraisal, acceptance, problem-solving, or attentional redeployment have all been shown to be related to elevated levels of depression, anxiety, or borderline personality disorder symptoms (see Aldao et al. 2010, Campbell-Sills & Barlow 2007, Lynch et al. 2007, McLaughlin et al. 2007, Roemer et al. 2008). The inability to deploy these strategies to downregulate negative affect may also lead individuals to engage in maladaptive behaviors, such as binge eating or binge drinking; some studies have found relationships between eating disorders or alcohol-related disorders and difficulties in acceptance (Breslin et al. 2002, Kristeller et al. 2006, Marlatt et al. 2004) and problem-solving (Cooper et al. 1992, Van Boven & Espelage 2006).

Some people do not simply fail to downregulate negative emotions but also engage in processes that exacerbate and prolong these emotions. Rumination, defined as a perseverative focus on one's negative emotions and the causes and consequences of them, without engaging in problem-solving, prospectively predicts symptoms and diagnoses of major depression (see meta-analyses by Aldao et al. 2010, Mor & Winquist 2002, Rood et al. 2009, Watkins 2008). Rumination has also been shown to predict symptoms of anxiety (Clohessy & Ehlers 1999, Fresco et al. 2002, Harrington & Blankenship 2002, Mayou et al. 2002, Nolen-Hoeksema 2000, Nolen-Hoeksema & Morrow 1991, Schwartz & Koenig 1996, Segerstrom et al. 2000). Among the specific anxiety disorders, rumination is associated with an increased risk for social phobia (Mellings & Alden 2000), posttraumatic stress disorder (Clohessy & Ehlers 1999, Ehlers et al. 1998, Mayou et al. 2002, Murray et al. 2002), and generalized anxiety (McLaughlin & Nolen-Hoeksema 2011, Watkins 2009). Perhaps because people are trying to escape

from their aversive self-awareness (Heatherton & Baumeister 1991), rumination also prospectively predicts increases in substance abuse (Caselli et al. 2008, 2010; Nolen-Hoeksema & Harrell 2002; Nolen-Hoeksema et al. 2007; Skitch & Abela 2008) and eating disorders (Holm-Denoma & Hankin 2010, Nolen-Hoeksema et al. 2007, Rawal et al. 2010).

Psychopathology can also result from the excessive attempts to downregulate negative emotions through strategies such as suppression or avoidance (Gross 1998, Hayes et al. 1996). Various forms of suppression and avoidance have been implicated in psychopathology, including suppression of emotional expression (Gross 1998) and suppression of unwanted thoughts (Wenzlaff & Wegner 2000). Hayes and colleagues (1999) used the term "experiential avoidance" to refer to the suppression or avoidance of an array of psychological experiences, including thoughts, emotions, sensations, memories, and urges. Finally, behavioral avoidance of emotionally evocative situations has a long history of study in psychology (Mowrer 1947). Studies have confirmed that people who chronically suppress or avoid their emotions are at increased risk for depression (Wenzlaff & Wegner 2000) and anxiety disorders, such as panic disorder (Barlow et al. 1989, Lissek et al. 2009), posttraumatic stress disorder (Foa & Kozak 1986), specific phobia (Merckelbach et al. 1996), and social phobia (Kashdan & Breen 2007).

Some people may engage in potentially dangerous behaviors, such as binge drinking or binge eating, in attempts to suppress or avoid their emotions, leading to disorders such as substance abuse (Cooper et al. 1988) or eating disorders (Polivy & Herman 2002, Tice et al. 2001). Indeed, chronic avoidance and suppression are associated with increased risk for eating disorders (Engler et al. 2006) and substance abuse (Sher & Grekin 2007).

A meta-analysis examining the relationships of reappraisal, problem-solving, acceptance, rumination, suppression, and avoidance to psychopathology (i.e., depression, anxiety, substance abuse, and eating disorders) found

a large effect size for rumination; medium to large for avoidance, problem solving, and suppression; and small to medium for reappraisal and acceptance (Aldao et al. 2010). Depression and anxiety were more consistently related to emotion regulation deficits than were substance abuse and eating disorders. These results were found in both community samples and comparisons of clinical to nonclinical samples, with larger effects found in studies including clinical samples. Thus, there is substantial evidence that difficulties in emotion regulation, particularly the tendencies to use rumination, avoidance, or suppression and failures to use problem-solving, are associated with psychopathology, particularly depression and anxiety.¹

GENDER, EMOTION REGULATION, AND PSYCHOPATHOLOGY

As noted, at least three key questions can be asked about the relationships among gender, emotion regulation, and psychopathology. The first is whether there are gender differences in the tendencies to use certain emotion regulation strategies. Answering this question involves examining mean differences between men and women in endorsement of strategies. The second question is whether emotion regulation strategies are similarly related to psychopathology in men and women. Answering this question involves examining gender differences in the relationships between emotion regulation strategies and psychopathology. The third question is whether gender differences in emotion regulation strategies account for gender differences in certain psychopathologies. Answering this question involves mediational analyses to determine whether statistically

accounting for gender differences in emotion regulation significantly reduces observed gender differences in psychopathology.

Gender Differences in Tendencies to Use Specific Emotion Regulation Strategies

Women are widely viewed as the “more emotional sex,” with greater tendencies to experience, express, and dwell on their emotions (Barrett & Bliss-Moreau 2009, Brody 1993, Deaux & Major 1987, Fabes & Martin 1991, Fischer & Manstead 2000, LaFrance & Banaji 1992, Shields 1987). Men, on the other hand, are viewed as tending to suppress or avoid both the experience and expression of emotions. Further, people tend to make dispositional attributions for women’s expressions of emotion, seeing them as the result of something deep, meaningful, and stable about women, but tend to attribute men’s expressions of emotion to the situations they are facing (Barrett & Bliss-Moreau 2009).

Consistent with these views of the emotional lives of women and men, some gender role theories suggest that women use more internally focused, passive responses to their emotions, such as rumination, while men are more likely to engage in suppression or avoidance, including turning to substances to avoid (for a review see Tamres et al. 2002). Because men’s gender role is to be more active and agentic, they may also be more likely than women to engage in problem-solving and reappraisal in attempts to control or change the situations that they believe are driving their emotions (Tamres et al. 2002).

The emotion regulation strategy for which gender differences have been most consistently found is rumination. A meta-analysis of 10 studies with a combined sample of over 2,000 participants found that women scored significantly higher than men on self-report measures of the tendency to ruminate when distressed (Tamres et al. 2002). Studies subsequent to this meta-analysis have continued to find that women and girls score higher on rumination scales than

¹Aldao et al. (2010) did not examine the relationship between emotion regulation strategies and borderline personality disorder in their meta-analysis because there is a lack of empirical studies on this topic, despite the centrality of emotion regulation deficits in Linehan’s (1993) theory of borderline personality disorder. As a result, I do not address borderline personality disorder in this review either. Clearly, however, this is an important area for future research.

Effortful control:

the ability to exert voluntary control over emotional reactions and one's urges and impulses to act

men and boys do (Broderick & Korteland 2002, Cox et al. 2010, Hampel & Petermann 2005, Jose & Brown 2008, Lopez et al. 2009, Mezulis et al. 2002, Peled & Moretti 2007).

In an effort to obtain observational data on women's and men's tendencies to ruminate when in distress, Butler & Nolen-Hoeksema (1994) induced a sad mood or neutral mood in a sample of female and male college students, then gave them a choice of a task that required them to focus on and analyze their current emotional states or a task that was not emotion focused. They found that the overwhelming majority of women chose the emotion-focusing task whether they were in a sad mood or a neutral mood. In contrast, only about half the men chose the emotion-focusing task in either mood. Thus, there is evidence from both self-report and observational studies that women choose to focus on and analyze their emotions when in sad moods.

Perhaps surprisingly, the meta-analysis by Tamres et al. (2002) found that women were more likely than men to report engaging in most types of emotion regulation, specifically 11 out of 17 strategies examined. Some of these differences were in line with gender role theories. Women were significantly more likely than men to report engaging in wishful thinking, which may be akin to rumination. Women also reported seeking social support and turning to religion, which are in line with evidence that women express emotions more than men do (Brody 1993) and are more interpersonally oriented than men are (Feingold 1994, Hyde et al. 2008).

Women were also more likely than men to report using reappraisal and problem-focused coping, however, which was not expected based on gender role theories (Tamres et al. 2002). Moreover, women were more likely than men to report engaging in efforts to avoid or distract themselves from distressing situations. There were no emotion regulation strategies that men reported engaging in more often than women did.

Similarly, we found gender differences in a wide range of emotion regulation strategies in a

large ($n > 1,300$) community sample of women and men ranging from 25 to 75 years of age (Nolen-Hoeksema & Aldao 2011). Women reported using rumination, seeking social support, reappraisal, problem-solving, and acceptance significantly more than men. No gender differences were found in suppression of emotion.

The greater tendency for women to report engaging in putatively adaptive emotion regulation strategies more than men parallels findings on effortful control in children. Effortful control is considered a fundamental dimension of temperament characterized by the ability to exert voluntary control over emotional reactions and one's urges and impulses to act (see Eisenberg et al. 2007, Kochanska et al. 2000, Rothbart & Bates 2006). Effortful control includes cognitive strategies, such as attentional redeployment, planning, or reappraisal, as well as behavioral responses, such as withdrawal and direct action. Studies of children consistently find girls show greater effortful control abilities than boys, with large effect sizes for gender (see meta-analysis by Else-Quest et al. 2006).

One consequence of low effortful control may be that males are more likely to engage in impulsive, reward-seeking behaviors in response to negative emotions. Some studies suggest that the relationship between depressive affect and later alcohol use is stronger for men than women (Carney et al. 2000, Hussong et al. 2001, Swendsen et al. 2000), suggesting that men may be more likely than women to seek the rewarding effects of alcohol in response to negative emotions. Indeed, studies of adults show that men consistently score higher on measures of "drinking to cope" compared to women (Cooper et al. 1992, 1995; Frone et al. 1994; Nolen-Hoeksema & Harrell 2002; Park & Levenson 2002; Ratliff & Burkhart 1984). On the other hand, in laboratory studies, researchers find that women expect alcohol to interfere with their ability to cope with difficult situations and avoid alcohol when they must deal with stressful situations (Abrams & Wilson 1979, Sutker et al. 1982). More recent studies show that women do not experience the

dampening of emotional arousal due to intake of alcohol that men do (Udo et al. 2009), which may reduce their tendencies to turn to alcohol to cope with negative mood.

In summary, women report using more of almost all types of emotion regulation strategies compared to men, including rumination, reappraisal, problem-solving, acceptance, distraction, and seeking social support (or religion). This is consistent with studies of children showing that girls are higher on effortful control than boys. Men report using alcohol to cope more often than women do.

Gender Differences in the Relationships Between Emotion Regulation and Psychopathology

A greater tendency to use a particular emotion regulation strategy in one gender compared to another would not be consequential if that strategy was not associated with psychopathology in the gender more prone to use it. For example, women could report using more reappraisal than men, but if reappraisal doesn't predict lower levels of psychopathology in women, then the gender difference in reappraisal is inconsequential for gender differences in psychopathology. Or it could be that emotion regulation strategies are similarly related to psychopathology in men and women, so a greater tendency for one gender to use a certain strategy could have consequences for gender differences in psychopathology.

In our large community study (Nolen-Hoeksema & Aldao 2011), higher rumination scores and higher suppression scores were significantly related to higher depression and anxiety scores, and more problems due to alcohol use, in men and in women.² This is consistent with our previous meta-analysis showing that rumination and suppression/avoidance

are robustly related to depression and anxiety and also related to substance abuse (Aldao & Nolen-Hoeksema 2010). Similarly, drinking to cope with distress predicts increases in alcohol-related problems for men and for women in our community study and in other studies (Cooper et al. 1997, Nolen-Hoeksema & Harrell 2002, Rutledge & Sher 2001, Timko et al. 2005). Unfortunately, in our community study (Nolen-Hoeksema & Aldao 2011), the strategies theorized to be adaptive, including reappraisal, problem-solving, acceptance, and seeking emotional support, were not significantly associated with lower levels of depression, anxiety, or alcohol problems in either women or men. This is generally consistent with our earlier meta-analysis, which found that reappraisal and acceptance had relatively small relationships to psychopathology, although problem-solving had a moderate relationship to psychopathology (Aldao et al. 2010).

Aldao & Nolen-Hoeksema (2011) argued, however, that adaptive strategies may only predict psychopathology in the presence of maladaptive strategies, suggesting that they have compensatory effects among people prone to maladaptive strategies not seen when examined alone. Indeed, Aldao & Nolen-Hoeksema (2011) found an interaction between composite indices of adaptive and maladaptive strategies in the prediction of a composite psychopathology index of depression, anxiety, and alcohol use problems.³ Adaptive strategies predicted lower levels of psychopathology only among people with high levels of maladaptive strategies, consistent with a compensatory effect (similar results were obtained when the dependent variables were depression/anxiety alone or alcohol problems alone).

For this review I examined whether there were gender differences in these compensatory

²In Nolen-Hoeksema & Aldao (2011), we report only analyses of the relationships between strategies and depression. We conducted analyses of the relationships between the same strategies and self-reported anxiety (Beck & Steer 1990) and problems due to alcohol use (First et al. 1997) for this review. These results are available from the author.

³Aldao & Nolen-Hoeksema (2011) included reappraisal and acceptance in their adaptive strategies composite and included rumination, suppression, denial, and behavioral disengagement in their maladaptive strategies composite. The gender analyses reported in this section used those composite indices.

BDI: Beck Depression Inventory

SCID: Structured Clinical Interview for DSM-IV

effects and found there were. Among women, the interaction between adaptive and maladaptive strategies significantly predicted a composite psychopathology index (depression, anxiety, and alcohol problems); subsequent analyses showed that among women, adaptive strategies predicted these psychopathologies only among those with high levels of maladaptive strategies. Among men, the interaction between adaptive and maladaptive strategies was not a significant predictor of psychopathology.⁴ Thus it appears that there are some gender differences in the relationships between emotion regulation strategies and psychopathology. Specifically, for women, adaptive strategies appear to have some compensatory effects among those with higher levels of maladaptive strategies, but adaptive strategies do not have such compensatory effects against maladaptive strategies for men (for similar gender results in adolescents, see Sontag & Graber 2010).

Gender Differences in Emotion Regulation Accounting for Gender Differences in Psychopathology

Using the data from our community study (Nolen-Hoeksema & Aldao 2011), I also tested whether gender differences in mean levels of emotion regulation strategies statistically accounted for gender differences in symptoms of depression, anxiety, and alcohol abuse. Women did score higher than men ($p < 0.05$) on our two measures of depression, the Beck Depression Inventory (BDI; Beck & Beck 1972) and the total number of symptoms on a clinician administered Structured Clinical Interview for DSM-IV (SCID; First et al. 1997; see Aldao & Nolen-Hoeksema 2011 for information on this index), as well as our self-report measure of anxiety (Beck Anxiety Inventory; Beck & Steer 1990). Men scored higher than women ($p < 0.001$) on our measure of alcohol abuse, a count of symptoms on a clinician-administered SCID (see Aldao & Nolen-Hoeksema 2011).

⁴Results available from author.

Women's greater levels of rumination significantly mediated the relationship between gender and depression on both the BDI and the SCID symptom count (Sobel test p 's < 0.01). Rumination fully mediated the relationship between gender and SCID symptoms, but only partially mediated the relationship between gender and BDI scores (i.e., the relationship between gender and BDI scores was still significant at $p < 0.05$). These results were consistent using both the full rumination scale and the brooding subscale of rumination, from which items overlapping with depression symptoms have been removed (Treyner et al. 2003). Similarly, both the full rumination scale and the brooding subscale were partial mediators of the gender difference in self-reported anxiety (p 's < 0.05), but the gender difference in anxiety still remained significant. Thus, we have some evidence that mean gender differences in rumination account at least partially for the gender differences in depression and anxiety.

I also examined whether women's greater tendency to engage in reappraisal, problem-solving, acceptance, or seeking emotional support compared to men might mitigate the gender differences in depression or anxiety. That is, the fact that women engage in these adaptive strategies more often than men may result in the gender difference in depression or anxiety being smaller than it might otherwise be. The only indication of such an effect was in the relationship between seeking emotional support and gender differences in BDI scores. Seeking emotional support was associated with lower BDI scores, and when social support was added to the equation predicting BDI scores, the coefficient for the gender difference in BDI scores increased significantly ($p < 0.05$). This suggests that women's greater tendency to seek social support may mitigate the gender difference in depression somewhat; this result must be interpreted cautiously, however, because it was not replicated with SCID symptom count scores.

Using our community sample, I tested whether men's greater tendency to use alcohol to cope with stress accounted for their greater rates of alcohol-related problems and found

a significant mediational effect (Sobel's test $p < 0.01$). The relationship between gender and alcohol problems was still significant, however, when using alcohol to cope was in the model ($p < 0.001$), suggesting that men's greater tendency to cope by drinking only partially mediates the gender differences in alcohol-related problems. I also tested whether the greater degree of adaptive strategies reported by women compared to men (i.e., reappraisal, acceptance, seeking social support, and active coping) contributed to the gender differences in alcohol problems and found that it did not.

Thus, in general, there are similar relationships between the emotion regulation strategies of rumination, reappraisal, problem-solving, seeking emotional support, and acceptance and the psychopathologies of depression, anxiety, or alcohol problems in women and men, with one exception. Among women but not among men, putatively adaptive strategies are significantly associated with psychopathology only among those who also use maladaptive strategies, suggesting that the adaptive strategies may have some compensatory effects in women (but not men) prone to maladaptive strategies.

Do gender differences in emotion regulation account for gender differences in psychopathology? There were two significant, consistent findings. Women's greater tendency to engage in rumination compared to men was a significant mediator of women's greater levels of depression and anxiety compared to men. On the other hand, men's greater tendency to turn to alcohol to cope compared to women was a significant mediator of men's greater alcohol problems compared to women.

Why Do Women Report Engaging in More Emotion Regulation Strategies Than Men Do?

Why would women report more frequently using most emotion regulation strategies except drinking to cope, compared to men? Women may report using more emotion regulation because they have more distressing emotions to regulate. Several theorists have suggested that

women are more emotionally reactive to negative events than men are because they appraise these events as more stressful (Ge et al. 2001, Hyde et al. 2008, Rudolph & Hammen 1999). Women also report greater affect intensity than men do, meaning they report both more intense positive and more intense negative emotions in their daily lives (Fujita et al. 1991, Gohm 2003). However, fewer gender differences have been found in moment-by-moment emotional experiences (Barrett et al. 1998, Kring & Gordon 1998, Robinson et al. 1998), suggesting that gender differences in self-reports of global emotionality are strongly influenced by gender role expectations. Still, gender differences in self-reports of emotion regulation may be influenced by gender differences in self-perceptions of emotionality and perceptions of the stressfulness of the environment.

In their meta-analysis, Tamres et al. (2002) tested whether gender differences in emotion regulation strategies were found only in studies that also found gender differences in appraisals of stressors. They found that for problem-solving, avoidance, and positive reappraisal, women reported using the strategy more than men did only in studies in which women appraised the stressor as more severe than men did, suggesting that gender differences in these strategies could be the result of gender differences in stressor appraisal. In contrast, the gender differences in rumination and social support seeking were found across studies.

In our community study (Nolen-Hoeksema & Aldao 2011), we were able to directly test whether gender differences in emotion regulation strategies were significant even when controlling for gender differences in depressive symptoms. We found that all the gender differences (i.e., in rumination, seeking social support, reappraisal, problem-solving, and acceptance) remained significant after controlling for depression, suggesting they are not simply a reflection of women's greater tendency toward depression compared to men.

Still, it may be that, compared to men, women are more aware of and attentive to

their emotions and more likely to engage in concerted efforts to change their emotions. Women show more awareness of their own and others' emotions and pay more attention to these emotions compared to men on both self-report and performance-based measures (Brody & Hall 1993, Ciarrochi et al. 2005, Joseph & Newman 2010). On measures of emotional understanding, which present participants with a variety of scenarios, women show greater understanding of what emotions they or others would feel across different contexts and what the sources of these emotions would be (Barrett et al. 2000, Joseph & Newman 2010). Moreover, women show more complex and differentiated conceptualizations of emotion than men do, even when accounting for gender differences in verbal intelligence (Barrett et al. 2000). Women encode events and recall memories more in terms of their emotional content than men do (Davis 1999, Seidlitz & Diener 1998) and have more elaborated memories of autobiographical events than men do (Davis 1999). Women are more likely than men to see their emotions as providing useful information that it is important to analyze (Gohm 2003). Finally, whereas people tend to view men's emotions as the result of external situations, they view women's emotions as more likely due to internal, dispositional characteristics, seeing them as meaningful information to analyze (Barrett & Bliss-Moreau 2009, Brescoll & Uhlmann 2008).

This greater attention to, use of, and understanding of emotion may lead women to engage in more attempts to modify their emotions to meet environmental demands or to pursue their goals, i.e., to engage in emotion regulation strategies of a variety of kinds. Indeed, women outscore men on performance-based measures of the knowledge of what emotion regulation strategies would be most effective across a variety of contexts (Joseph & Newman 2010). These tendencies appear to start early. Girls show greater attention to and understanding of emotions than boys from an early age (see reviews by McClure 2000, Zahn-Waxler et al. 2008).

Greater emotional awareness and understanding may facilitate adaptive emotion regulation in most women. Indeed, most women do not suffer from significant depression or anxiety, even when they live in stressful environments, suggesting that they have emotion regulation repertoires that make them resilient (Nolen-Hoeksema & Hilt 2009). As noted above, our community study found that among women, adaptive strategies compensate somewhat for the presence of maladaptive strategies.

For some women, however, this attention to and engagement with emotions may become maladaptive, in the form of a ruminative focus on emotions (Barrett et al. 2000, Zahn-Waxler et al. 2008). These women may become excessively engaged in understanding their emotions and the causes of their emotions and may begin to feel trapped in analyzing their emotions, as in rumination. Further, a greater tendency to see their emotions as the result of something in themselves rather than something in their situations (Barrett & Bliss-Moreau 2009) may lead some women to blame themselves for their emotions or to believe their emotions are out of control. Nolen-Hoeksema & Jackson (2001) found that women were more likely than men to believe that negative emotions are uncontrollable, and this gender difference in beliefs partially mediated the gender difference in rumination.

Women are also more aware of and concerned with the emotions of others than men are (Brody & Hall 1993, McClure 2000). This may facilitate women's ability to empathize with and relate to others. Being able to connect with others also likely builds social support, and we found in our community study that women's ability to solicit emotional support from others protected them somewhat against being more depressed. But some women may become too concerned with or affected by the emotions of others (Gilligan 1982, Helgeson 1994, Jack 1991, Miller 1976), and this may also contribute to rumination. Nolen-Hoeksema & Jackson (2001) found that women scored higher than men on a measure of "excessive interpersonal orientation" (e.g., "For me to be happy,

I need others to be happy”); Fritz & Helgeson (1998), and this gender difference in excessive interpersonal orientation partially mediated the gender difference in rumination.

Finally, it is important to note that although women may have a larger repertoire of emotion regulation strategies, including adaptive strategies, that they endorse compared to men, the context in which they use these strategies is an important determinant of their effectiveness (Bonanno et al. 2004). Indeed, Aldao & Nolen-Hoeksema (2010) argued that one reason adaptive strategies are not as strongly related to psychopathology as maladaptive strategies is that the effects of adaptive strategies are more context dependent than the effects of maladaptive strategies. For example, reappraisal may be adaptive in some situations, but maladaptive in others, as in an abusive relationship. In contrast, maladaptive strategies such as rumination may have detrimental effects in a wider range of circumstances. An important question for future research is whether women are more likely than men to try to internally manage their emotions in difficult situations or to continue to problem-solve (particularly around interpersonal problems) even when they become intractable, rather than abandoning impossible situations.

What Are Men Doing with Their Emotions Other Than Drinking?

The only emotion regulation strategy that men consistently report doing more often than women is drinking to cope. We know that men are experiencing emotions as much as women are—again, experience-sampling studies and laboratory emotion-induction paradigms show few consistent gender differences in online emotional reports (Barrett et al. 1998). Perhaps men’s relative lack of attention to, or understanding of, their emotions leads them to engage in fewer attempts to regulate these emotions.

Automatic emotion regulation. It is highly likely, however, that men are engaging in a

range of activities to regulate their emotions but not labeling them as emotion regulation strategies. Barrett and colleagues (2000) suggest that men may be more likely to engage in automatic, nonconscious emotion regulation compared to the more conscious, linguistically based emotion regulation of women. People clearly do regulate their emotions even when they are not conscious of having emotions or engaging in regulation (Bargh & Williams 2007). Evidence shows that people automatically correct both positive and negative moods toward a neutral baseline (Forgas & Ciarrochi 2002, Larsen & Prizmic 2008), particularly if they are “action-oriented” instead of “state-oriented” (Jostmann et al. 2005), as men may be.

As for specific emotion regulation strategies, there is evidence that people engage in automatic reappraisal, for example, strategically comparing themselves with others in order to improve their sense of well-being (Aspinwall & Taylor 1993). Moreover, nonconscious reappraisal works to reduce reactivity to negative stimuli. Williams and colleagues (2009) first induced anxiety in participants, then either nonconsciously primed participants to reappraise the situation or explicitly instructed them to reappraise. Participants who underwent the nonconscious reappraisal prime showed reductions in physiological activity equal to those of the participants explicitly instructed to reappraise, and both of these groups showed greater physiological recovery than a control group given no prime or instructions. In a second study, Williams and colleagues (2009) found that the effects of the nonconscious reappraisal prime were even stronger among people who scored low on a self-report measure of the tendency to engage in reappraisal. The researchers suggest that nonconscious emotion regulation is more efficient and less susceptible to interference from cognitive load (e.g., due to distraction, fatigue, competing demands) than explicit, conscious emotion regulation is (see also Mauss et al. 2006). Thus, to the extent that men are more likely than women to engage nonconsciously in emotion regulation strategies such as reappraisal, they may be able

to use such strategies to regulate their moods across a wider variety of circumstances.

McRae and colleagues (2008) found evidence that men may engage in reappraisal more automatically and with less effort than women. They instructed participants either to look at or to reappraise negative photos and found that men and women reported equal reductions in self-reported distress when using reappraisal relative to just looking. Men, however, showed less prefrontal cortex activity as well as a greater decline in amygdala activity when reappraising than women did. This suggests that men had to exert less executive control to get a greater reduction in amygdala activity than women did, perhaps because reappraisal is more automatic and less effortful for men than for women. Men also showed more evidence of positive implicit attitudes toward emotion regulation, which have been linked in a previous study to more automatic emotion regulation but not to greater self-reports of conscious emotion regulation (Mauss et al. 2006).

There is a great deal more work to be done to determine if men engage in more automatic emotion regulation than do women. If so, it will be important to determine if they engage in both more adaptive and maladaptive emotion regulation and what the implications are for gender differences in psychopathology.

Social support, male style. Another type of emotion regulation men may engage in more than women, but may not label as emotion regulation, is seeking social support and lifting their moods through activities with friends. Compared to females, males' interactions with friends tend to be more activity based (e.g., Furman & Buhrmester 1985, Parker & Asher 1993, Rose 2002, Zarbatany et al. 2000). Further, studies of children suggest that there is a stronger link between shared activities with friends (e.g., sports) and emotional closeness in boys than in girls (e.g., Camarena et al. 1990, Zarbatany et al. 2000). Self-report measures of coping or emotion regulation tend to ask more about a female style of social support seeking, namely, seeking emotional support from others

through self-disclosure. Males may not endorse such items but still frequently seek support from male friends through shared activities.

Engaging in shared activities with friends could help to positively regulate emotions in several ways (see Zarbatany et al. 2000). The emotional closeness created by shared activities could affirm a male's self-worth and sense of belonging. The activity could act as a positive distraction and an instrumental behavior, up-regulating positive affect, much as with behavioral activation assignments in psychotherapy (Jacobson et al. 2001). And while engaging in activity, the individual may reveal some of what is causing him distress to his friend, resulting in expressions of concern or validation, or offers of help. Thus, when distressed, males may seek support from friends by engaging in shared activities, never registering this as support seeking or emotion regulation but nonetheless gaining regulatory benefits.

Studies suggest that social support may be especially effective in reducing distress and increasing well-being when it is "invisible," that is, when the provider does not make it obvious that he or she is providing support and/or the recipient is not consciously aware that he or she is receiving support (Bolger & Amarel 2007). Howland & Simpson (2010) found that the beneficial effects of invisible emotional and practical support are even stronger for men than for women. They conjectured that invisible support allows men to maintain their sense of agency and independence while receiving affirmation and practical help.

In contrast to male same-sex friendships, female same-sex friendships tend to involve more self-disclosure (e.g., Rose 2002, Zarbatany et al. 2000). Unfortunately, the self-disclosure characteristic of female close relationships can backfire when it leads to co-rumination, defined as excessively discussing personal problems within a dyadic relationship (Haggard et al. 2011; Rose 2002, 2007; Rose et al. 2007). Co-rumination is characterized by discussing the same problem repeatedly, mutual encouragement of discussing problems, speculating about problems, and focusing on negative

feelings (Rose 2002, Rose et al. 2007). Although bouts of co-rumination appear to lead to increased intimacy with friends, they are also associated with increases in depressive symptoms in girls and women (Calmes & Roberts 2008, Rose et al. 2007). Co-rumination may have effects similar to those of rumination, rehearsing negative interpretations of events, interfering with problem-solving, and impeding instrumental behavior. The self-disclosure that occurs in co-rumination also leaves an individual vulnerable to relational aggression, that is, a friend revealing sensitive information about the individual to others (Rose 2002).

The danger of co-rumination when females seek social support may help to explain why social support is not consistently or strongly related to improvements in mood in women (Nolen-Hoeksema & Aldao 2011). On the other hand, the fact that self-report measures of seeking social support describe it in terms that may not match men's style of using support from friends may explain why social support is not consistently or strongly related to improvements in mood in men (Nolen-Hoeksema & Aldao 2011).

Anger rumination and aggressive behavior in males. One emotion regulation activity that may be linked to greater aggression in males, but that has been relatively understudied, is anger rumination. Although women ruminate more in response to sadness or anxiety, men appear to ruminate more in response to anger. In two studies using different mood inductions, Rusting & Nolen-Hoeksema (1998) found that women induced into an angry mood were subsequently more likely to choose a nonemotion-focusing task than an emotion-focusing task, whereas men were more likely to choose to focus on their angry emotions (see also Knobloch-Westerwick & Alter 2006, Sukhodolsky et al. 2001).

In turn, anger rumination is associated with increases in angry feelings and thoughts and more aggressive behavior. Rusting & Nolen-Hoeksema (1998) found that individuals induced to ruminate after an anger provocation

became more angry and had more angry thoughts compared to individuals distracted after an anger induction. In experimental studies, Bushman (2002) found that participants provoked into anger then induced to ruminate showed more aggressive behavior compared to participants who were provoked but then distracted. Further, Bushman and colleagues (2005) found that participants induced to ruminate after a provocation showed more displaced anger in a mildly annoying situation unrelated to the original anger provocation, even when this annoying situation happened eight hours after the original provocation.

Verona (2005) examined the relationship between self-report measures of the tendency to ruminate and aggressive behavior in an experiment in which participants were to deliver electric shocks to a confederate when the confederate made mistakes on a task. She found that both men and women who scored high on a rumination questionnaire gave more shocks to the confederate than those scoring low on rumination in a context in which their attention was directed solely at the confederate's performance. In another condition in which the participants were distracted from the confederate's performance, women who scored high on rumination did not deliver more shocks than those low on rumination, but men who scored high on rumination still delivered more shocks than those low on rumination, suggesting that the association between rumination and aggression is less context dependent in men than women. Finally, self-reported anger rumination is associated with higher scores on measures of physical and verbal aggression and hostility in adults (Anestis et al. 2009) and adolescents (Peled & Moretti 2007).

Thus, men appear to engage in angry rumination more than women. Anger rumination is associated with an increase in angry feelings and thoughts and more aggressive behavior in laboratory settings and higher self-reports of aggression and hostility.

Summary. In summary, I suggest that the literature is missing vital information on how men

regulate their emotions because we are not currently asking the right questions to reveal some of men's typical emotion regulation strategies. For example, much of men's emotion regulation may be automatic and nonconscious and therefore not measurable with self-report questionnaires. In addition, the way men use social support to regulate their emotions may be different from the way women do, and not captured by current measures. Finally, men may not be as likely as women to ruminate when sad or anxious but may be more likely than women to ruminate when angry, contributing to their higher rates of aggressive or antisocial activity.

There are likely other ways men cope or regulate their emotions that are to be discovered. The focus of the field on voluntary strategies, such as reappraisal and suppression, that were described several decades ago by the original stress and coping theorists (Carver et al. 1989, Folkman & Lazarus 1980) has obscured our investigation of other types of adaptive and maladaptive strategies that might characterize men's (or women's) emotion regulation.

LESSONS LEARNED AND QUESTIONS RAISED

This examination of the gender differences in emotion regulation and their relationship to gender differences in psychopathology has suggested some important lessons and raised some interesting questions. These lessons and questions pertain to theories of the relationships between emotion regulation and psychopathology generally and to the role of gender differences in these relationships.

1. How Do We Understand the Lack of Substantial Relationships Between Putatively Adaptive Emotion Regulation Strategies and Psychopathology?

Women reported engaging in more of all types of emotion regulation compared to men, except drinking alcohol to cope. Women's greater repertoire of consciously chosen emotion

regulation strategies does not seem to be doing them much good, however, in that the putatively adaptive strategies endorsed more by women are at best weakly related to psychopathology in the analyses of our community sample (Nolen-Hoeksema & Aldao 2011) and in our meta-analysis (Aldao et al. 2010). The one exception was that among women high in maladaptive strategies, a composite of adaptive strategies was significantly related to lower psychopathology. How do we reconcile these findings with the several theories that argue that strategies such as reappraisal and acceptance are critical in protecting against psychopathology (e.g., Gross 1998, Hayes et al. 1999), the therapies that teach these strategies and show reductions in psychopathology (e.g., Beck et al. 1979, Hayes et al. 2011), and the experimental evidence that inducing people to engage in reappraisal or acceptance lowers subjective distress (e.g., Kuehner et al. 2009, McRae et al. 2008)?

As noted above, Aldao and colleagues (2010, Aldao & Nolen-Hoeksema 2011) suggested that the effectiveness of adaptive strategies may be more context dependent than the effectiveness of maladaptive strategies. For example, ruminating in an abstract, self-evaluative way when one is distressed may lead to more distress regardless of the context, while the appropriateness of reappraisal or acceptance may depend on the situation. Thus, women's tendencies toward more maladaptive strategies may be more frequently harmful than their tendencies toward more adaptive strategies are beneficial.

The present review also suggests that some individuals who say they are not engaging in reappraisal, acceptance, or problem-solving may actually be doing so but may not be conscious of it. For these individuals, engaging in these adaptive emotion regulation strategies may be so automatic that they are not aware that they are regulating their emotions, and thus they score low on self-report measures of adaptive emotion regulation strategies (McRae et al. 2008). Further, this type of automatic, nonconscious engagement in emotion regulation may be more efficient and effective in reducing emotion arousal than conscious emotion

regulation (Mauss et al. 2006, Williams et al. 2009). So, to the extent that men are especially likely to engage in nonconscious emotion regulation more than women, they may be benefiting from strategies such as reappraisal even more than women.

We need more research on gender differences in nonconscious emotion regulation to determine whether men truly are engaging in more automatic emotion regulation than women and whether this contributes to men's lower rates of disorders such as depression and anxiety compared to women. More generally, we need more research on nonconscious emotion regulation to understand its effects and how people can increase positive nonconscious strategies and reduce negative nonconscious strategies.

Furthermore, the discrepancies between the results of self-report questionnaire research and experimental research on the effects of strategies such as reappraisal point to the obvious importance of not relying only on self-reports in studies of emotion regulation. These self-reports can be affected by mood, such that people in more distress report engaging in more of all types of emotion regulation (see Nolen-Hoeksema et al. 2008). They may also be affected by gender role expectations and stereotypes, leading women to endorse engaging in more emotion regulation than men because this fits the expectation that women are more "emotional" (Barrett & Bliss-Moreau 2009).

2. Greater Self-Reports of Emotion Regulation in Women Compared to Men May Also Be Due to Their Greater Attention to and Involvement in Their Emotional Lives. But Is This a Good Thing?

Women's greater self-reports of emotion regulation strategies compared to men may not just be due to their conforming to gender role expectations. They may also reflect a greater awareness, understanding, and analysis of emotions in women compared to men (see also Barrett & Bliss-Moreau 2009). Thus, women

may be engaging in more explicit, conscious emotion regulation because they acknowledge when they are distressed and take that distress as meaningful rather than ignoring or dismissing it.

Some emotion regulation theories suggest that emotional awareness and understanding are critical first steps to adaptive emotion regulation (e.g., Hayes et al. 1999, Mennin & Fresco 2010, Roemer et al. 2008, Saarni 2007, Salovey et al. 1995). Indeed, people scoring high on measures of emotional clarity, defined as the ability to identify, understand, and distinguish one's own emotional experiences (Gohm & Clore 2000, 2002; Salovey et al. 1995), show better emotion regulation and lower levels of depression and anxiety (Gohm & Clore 2000, 2002; Mennin et al. 2007).

Emotional awareness and understanding can have costs, however (Mauss et al. 2006). A recent study showed that individuals higher on emotional clarity showed more prolonged distress reactions to negative films (Vine & Nolen-Hoeksema 2011), presumably because they were more aware of the emotions the films aroused and were more engaged in thinking about them. Moreover, as suggested above, awareness and analysis of one's emotions can become maladaptive when individuals cannot find some understanding of their emotions or disengage from them if they are becoming uncontrollable or if the context demands (Nolen-Hoeksema et al. 2008). Thus, women's greater tendency to engage in rumination may be due in part to their greater attention to their emotions and tendencies to see their emotions as meaningful.

The evidence that people make more dispositional attributions for women's emotions but more situational attributions for men's emotions (Barrett & Bliss-Moreau 2009) also suggests that as they are analyzing their emotions, women may be likely to make attributions to stable, internal features of themselves rather than to situational factors. This may reduce their tendencies to take action to change situations that truly are contributing to distress.

These speculations about the implications of gender differences in reports of emotion regulation, and in emotional awareness and understanding, are another example of how paying attention to gender leads us to ask critical questions not only about gender but also about basic processes.

3. It's Time to Stop Assuming That Men Are Just Suppressing or Denying Their Emotions

The literature on gender and emotion has been replete with claims that men ignore, deny, or suppress their emotions, compared to women (Baron-Cohen 2003, Brody & Hall 1993, Gray 1992). Our analyses of gender differences in self-reports of emotion regulation found no differences in reported suppression of emotion, despite a large sample size ranging in age from 25 to 75 years (Nolen-Hoeksema & Aldao 2011). The meta-analyses by Tamres and colleagues (2002) found that women were *more* likely than men to report engaging in distraction and avoidance as coping strategies. Although we know of no work specifically on gender differences in automatic suppression of emotion, studies using momentary assessments of emotions generally find no differences in men's and women's responses to emotion-eliciting stimuli or in everyday emotional experiences, suggesting that men are just as aware of their emotions from moment to moment as women are (for reviews, see Barrett & Bliss-Moreau 2009, Barrett et al. 2000). Thus, the widespread belief that men's modus operandi when it comes to emotion regulation is denial and suppression is not supported by the existing evidence.

Assumptions that men deny or suppress their emotions have likely obscured the search for ways, both adaptive and maladaptive, that men do regulate their emotions. This review suggests that men may engage in more nonconscious emotion regulation, which calls for more work using implicit measures of emotion regulation. I also suggest that men may seek social support in different ways from women, which

do not show up on coping or emotion regulation questionnaires. This calls for research on the potential differences in the ways men and women seek support from friends and intimates and what kinds of support they find useful.

4. Are Men Really on Mars and Women on Venus When It Comes to Emotion Regulation?

Clearly not. The mean gender differences in emotion regulation are small even when they are statistically significant (Nolen-Hoeksema & Aldao 2011, Tamres et al. 2002). So the similarities between men and women in emotion regulation are greater than the differences.

Still, the gender differences in engagement in emotion, self-perceptions of emotion regulation (as indexed by self-reported emotion regulation), and gender role expectations for emotions discussed here raise interesting questions about whether men and women may respond differently to certain interventions to improve emotion regulation problems. Williams and colleagues (2009) found that implicitly priming reappraisal goals was more effective in participants who scored low on self-reports of the use of reappraisal. This raises the question of whether implicit instruction in reappraisal as is done in interpretation retraining (MacLeod & Mathews 2012) may be more effective in men than in women since men tend to self-report low use of reappraisal. Similarly, if men do respond even more than women to invisible social support, as the study by Howland & Simpson (2010) indicates, this suggests that helping distressed men's support providers be more skillful in providing support surreptitiously may be a useful intervention.

On the other hand, women's endorsement of the use of a wide range of emotion regulation strategies suggests that therapies that attempt to shore up their adaptive strategies (e.g., reappraisal and acceptance) while diminishing their use of maladaptive strategies (e.g., rumination) would be especially attractive to them. Rumination-focused cognitive behavioral therapy (Watkins et al. 2007, 2011) directly

addresses the tendency to ruminate and teaches alternative strategies for managing mood and negative cognition (i.e., mindfulness, reappraisal).

5. How Much Does Emotion Regulation Have to Do with Psychopathologies More Common in Men Than Women (i.e., More “Externalizing” Disorders)?

Most of the discussion of psychopathology in this review, and in the literature on emotion regulation, has focused on depression and anxiety, two disorders in which emotional disturbances are at the core. The meta-analysis by Aldao and colleagues (2010) found that emotion regulation strategies were more strongly related to depression or anxiety symptoms than to alcohol problems, suggesting that emotion regulation plays a stronger role in “internalizing” disorders, which are more prevalent in women than men, than in “externalizing” disorders, which are more prevalent in men than women. Similarly, analyses of our community study found that the only variable that helped to explain men’s higher rates of alcohol problems was “drinking to cope.” These trends raise questions about whether most emotion regulation deficits really do play much of a role in psychopathologies more common in men than women, namely externalizing disorders such as alcohol use problems and aggressiveness.

The literature on effortful control may be taken as evidence that emotion dysregulation contributes to externalizing disorders in males. Low effortful control has been linked to aggressiveness and antisociality in studies of children (Bongers et al. 2003; Eisenberg et al. 2001, 2005; Moffitt & Caspi 2001). Several theorists have suggested that the greater rates of low effortful control in boys versus girls may account for the greater rates of aggression and antisociality seen in boys than girls (see Baron-Cohen 2002; Else-Quest et al. 2006; Mullin & Hinshaw 2007; Zahn-Waxler et al. 2006, 2008). Further, as suggested above, low effortful control may lead males to turn to

alcohol to cope with distress more often than females do.

Low effortful control has parallels with the kinds of emotion regulation strategies that have been discussed in this review (see Eisenberg et al. 2010) and indeed may contribute to the use of maladaptive strategies such as rumination (Henry & Moffitt 1997, Joormann 2010). It is not clear, however, whether individuals low on effortful control engage in antisocial or aggressive behavior, or drink alcohol, because they are unable to regulate an emotion or because they are unable to control an impulse or motivation to behave inappropriately. Although the ability to regulate emotions and the ability to regulate motivations and impulses are clearly related conceptually and empirically, the distinctions between them are often ignored, sometimes resulting in assumptions that men who are acting aggressively, or have alcohol use problems, are “actually depressed” (see Nolen-Hoeksema 2008). This can lead to inappropriate treatment strategies that target mood disorders presumed to underpin externalizing behavior in men but tend to be ineffective in reducing externalizing behaviors (Schuckit 1995).

Thus, the links between emotion regulation and externalizing disorders, which are more common in men, are not clear. Again, it may be that we have not been measuring the kind of emotion regulation deficits that are more common in men and can contribute to externalizing disorders. For example, I suggested above that anger rumination may play a role in men’s aggressiveness, but this remains to be shown.

It may also be that emotion regulation deficits tend not to lead to alcohol problems or antisociality directly but rather only when in interaction with important moderators. For example, people differ in how rewarding they find substances (Newlin & Thomson 1990, Sher et al. 2005), and higher self-reported reward sensitivity is related to a number of indicators of alcohol misuse (Loxton & Dawe 2001, Pardo et al. 2007, Zisserson & Palfai 2007). Emotion regulation deficits may interact with individuals’ sensitivity to the rewarding aspects of substances like alcohol, determining whether

they will develop alcohol abuse (Aldao et al. 2010, Carver et al. 2008, Nolen-Hoeksema & Watkins 2011). Men have more positive expectancies for the effects of alcohol than women (see review by Nolen-Hoeksema & Hilt 2006), which may indicate a greater perception of alcohol as rewarding. Thus, men may carry this moderator more often than women.

The social environment also influences how much reward, or punishment, individuals receive for externalizing behaviors. For example, individuals, particularly youth, with high levels of exposure to, and reinforcement for, alcohol use or aggression are more likely to see these behaviors as normative and appropriate ways to respond to distress, including the distress caused by emotion regulation deficits (Wills & Cleary 1999, Wood et al. 2004). On the other hand, individuals with emotion regulation deficits whose environments discourage or prohibit the use of alcohol or aggression may be less likely to do so (Nolen-Hoeksema & Watkins 2011). Males receive more exposure to positive peer and adult models, and less punishment, for alcohol use and aggression than do females (Huselid & Cooper 1992, White & Huselid 1997). Thus, gender-related social factors may be important moderators of whether emotion dysregulation leads to externalizing disorders.

CONCLUSIONS

The gender differences in emotion regulation and their links to gender differences in psychopathology are important because they can provide clues as to the sources of problems that are more common in women or in men. To the extent that a gender difference in a particular emotion regulation strategy significantly accounts for the gender difference in a form of psychopathology, this suggests that intervening at the level of that emotion regulation strategy may help to reduce the psychopathology in the gender in which it is most prominent.

In this review, we found that the greater tendency toward rumination in women compared

to men partially accounted for the greater level of depression and anxiety in women compared to men. Thus, when treating depressed or anxious women, clinicians may need to be particularly attentive to whether they are prone to ruminate and to use interventions to reduce that tendency, such as rumination-focused CBT (Watkins et al. 2007, 2011). We also found that men's greater tendency to use alcohol to cope compared to women partially accounted for their higher rates of alcohol use problems. This suggests that interventions addressing drinking to cope (e.g., Marlatt & Witkiewitz 2010) are particularly indicated for men.

This review of the gender differences in emotion regulation and its links to psychopathology also raised some critical questions about common assumptions or assertions in the general literature on emotion regulation. The fact that emotion regulation strategies such as reappraisal and acceptance, which are central to theories and treatments for depression and anxiety (Beck et al. 1979, Gross 1998, Hayes et al. 1999), are endorsed more by members of the gender who suffer these disorders most often (i.e., women), and are not consistently strongly related to symptoms of depression and anxiety, raises questions about how we view and measure these strategies. Similarly, the fact that men do not report more suppression, avoidance, or denial than women, and that use of these strategies does not account for any of the variance in the gender difference in alcohol use disorders, raises questions about the role of these strategies in these disorders and whether emotion regulation has much at all to do with externalizing disorders.

I suggested that some of these questions may be resolved by more research on nonconscious forms of emotion regulation and by broadening our conceptualization of emotion regulation to include forms that may be more idiosyncratic to men versus women. Overall, gender has proven a useful lens through which to examine the literature on emotion regulation and psychopathology and to identify holes and quandaries in that literature.

SUMMARY POINTS

1. Women report using more of almost all types of emotion regulation strategies compared to men, including rumination, reappraisal, problem solving, acceptance, distraction, and seeking social support (or religion). This is consistent with studies of children showing that girls are higher on effortful control than boys. Men report using alcohol to cope more often than women do.
2. Emotion regulation strategies are similarly related to psychopathology in women and men, with one exception: For women, adaptive strategies appear to have some compensatory effects among those with higher levels of maladaptive strategies, but adaptive strategies do not have such compensatory effects against maladaptive strategies for men.
3. More rumination in women compared to men partially accounts for greater depression and anxiety in women compared to men, whereas a greater tendency to use alcohol to cope partially accounts for more alcohol misuse in men compared to women.
4. The literature on emotion regulation is likely missing vital information on how men regulate their emotions. I suggest that men may engage in more automatic, nonconscious emotion regulation, and the types of social support men provide to one another may be different from those that women provide. In addition, men may engage in more anger rumination than women do.

FUTURE ISSUES

1. We need more research on automatic, nonconscious emotion regulation to determine if it is more common in men than women and its relationship to psychopathology. Also, research should rely less on self-reports of emotion regulation.
2. Emotional awareness and understanding seem greater in women than men, but we do not know if this is an asset or a liability for women, so more research is needed.
3. Future research should avoid the assumption that men suppress, deny, or avoid their emotions and look for ways men regulate their emotions that are not currently obvious.
4. Understanding whether emotion regulation plays any role in forms of psychopathology more common in men than women is a priority.

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