One Angry Woman: Anger Expression Increases Influence for Men, but Decreases Influence for Women, During Group Deliberation

Jessica M. Salerno
Arizona State University

Liana C. Peter-Hagene
University of Illinois at Chicago

We investigated whether expressing anger increases social influence for men, but diminishes social influence for women, during group deliberation. In a deception paradigm, participants believed they were engaged in a computer-mediated mock jury deliberation about a murder case. In reality, the interaction was scripted. The script included 5 other mock jurors who provided verdicts and comments in support of the verdicts; 4 agreed with the participant and 1 was a “holdout” dissenter. Holdouts expressed their opinions with no emotion, anger, or fear and had either male or female names. Holdouts exerted no influence on participants’ opinions when they expressed no emotion or fear. Participants’ confidence in their own verdict dropped significantly, however, after male holdouts expressed anger. Yet, anger expression undermined female holdouts: Participants became significantly more confident in their original verdicts after female holdouts expressed anger—even though they were expressing the exact same opinion and emotion as the male holdouts. Mediation analyses revealed that participants drew different inferences from male versus female anger, which created a gender gap in influence during group deliberation. The current study has implications for group decisions in general, and jury deliberations in particular, by suggesting that expressing anger might lead men to gain influence, but women to lose influence over others (even when making identical arguments). These diverging consequences might result in women potentially having less influence on societally important decisions than men, such as jury verdicts.

Keywords: emotion, gender, jury decision making, persuasion, social influence

Granting myself permission to use my innate skills of the heart, accepting that emotion was perfectly valid in the art of persuasion, amounted to nothing less than a breakthrough. (Sotomayor, 2013, p. 210)

In her autobiography, Justice Sotomayor highlights emotion expression as a powerful persuasion tool—an argument that dates back to the 4th century B.C.E. (Aristotle, Rhetoric). Yet, expressing emotion has not always served her well. Her minority dissent from the Supreme Court’s decision to uphold Michigan’s affirmative action ban (Schuette v. Coalition to Defend Affirmative Action, 2014) was discredited for being “fueled by emotion” and, as a result, “legally illiterate and logically indefensible” (Serwer, 2014). She is not alone. Former CIA Director Michael Hayden dismissed a 6300-page committee report on the CIA’s use of torture because he believed Senator Dianne Feinstein was too emotional to produce an objective report (Swanson, 2014). Many women who have sat in board meetings, classrooms, workplace groups, juries, and governing bodies might relate to this anecdotal evidence that women’s opinions are less influential when presented with emotion—while seeing men harness this powerful persuasion tool successfully. The extent of anecdotal evidence in the media and the intuitive nature of this hypothesis makes it surprising that there is little experimental evidence documenting differential effects of expressing emotion on women’s and men’s abilities to exert influence in group decision-making contexts, such as jury deliberation.

Gender and Social Influence During Jury Deliberation

Identifying ways to be more influential in applied group settings is particularly important for women, given that they have long been perceived as less influential, competent, and rational than men during group discussions (e.g., Carli, 1999; Wood & Karten, 1986)—including mock jury deliberation (Nemeth et al., 1976). Although U.S. juries were originally composed exclusively of White men, we now have more women and racial minorities on juries, and we need to ensure that this is not merely token representation. A jury of diverse and participatory group members represents the American jury system ideal, in that it reinforces American values such as equality (Cornwell & Hans, 2011) and is thought to promote better decision making (e.g., Sommers, 2006).
and public confidence in the jury’s verdict (e.g., Ellis & Diamond, 2003). But do women have the same opportunity to exert influence over jury verdicts as do men? Research dating back to the 1950s that demonstrates jurors of higher social status participate more in jury deliberation than lower-status jurors contradicts this ideal and continues to be a problem (Cornwell & Hans, 2011). For example, mock jury studies demonstrate that women participate less than do men during deliberation (Hastie et al., 1983; Kirchmeyer, 1993; Nemeth et al., 1976) and are significantly more likely to change their vote during deliberation than are men (Golding, Bradshaw, Dunlap, & Hodell, 2007). Jury scholars have identified a “White male dominance” effect, such that White men are often most influential on real and mock juries (e.g., Bowers, Steiner, & Sandys, 2001; Lynch & Haney, 2009). These studies suggest that men might have more influence over the group’s final verdict than do women.

### Anger Expression and Social Influence

Thus, it is important to determine how women gain or lose influence during deliberation. Expressing one’s opinion with anger has some potential to help exert social influence, in general—although evidence is mixed. Anger expression can engender more concessions during negotiations and more effective leadership (Van Kleef et al., 2011) but can also decrease compliance when perceived as inappropriate (van Doorn, van Kleef, & van der Pligt, 2014). Although group-based persuasion is pervasive in everyday life, investigations of expressing anger in a group context is a “blind spot” in the literature (Harel & Rafaeli, 2008). In the context of jury deliberations, Lynch and Haney (2015) recently conducted a qualitative analysis of mock jury deliberations, and identified many examples of White men using emotion to exert influence during deliberations—both by asserting their own emotions, but also by policing the emotions of the other jurors. These examples highlight the need for an experimental test of the hypothesis that the effect of emotion expression on social influence depends on the gender of the expresser.

Why might expressing anger increase influence for men, but decrease influence for women? People draw inferences about others from the emotion that they express (Keltner & Haidt, 1999; van Kleef et al., 2011), but these emotion-based inferences can depend on the expressers’ gender. For example, people attribute female expressions of emotion to internal causes (e.g., being emotional) but male expressions to external causes (e.g., having a bad day, Brescoll & Uhlmann, 2008; Barrett & Bliss-Moreau, 2009). In addition, men are perceived as more competent when they express anger (Brescoll & Uhlmann, 2008; Tiedens, 2001), whereas anger expression reduces women’s perceived competence (Brescoll & Uhlmann, 2008). Thus, the same emotion expression can result in different inferences about men and women, which in turn could affect the expressers’ chances to exert social influence in a group setting.

We drew on these findings to test a novel theoretical explanation for the potential interactive effect of gender and anger expression on social influence. Resisting counterattitudinal messages can weaken, but also strengthen, people’s confidence in their own beliefs (Tormala & Petty, 2002, 2004). We theorized that, when people argue with someone who holds an opposing viewpoint, their perceptions of the basis for that opposing viewpoint might change how they perceive the validity of their own opinion. For example, if Tom disagrees with angry Jason, whose opinion Tom thinks is driven by competence, this might not only validate Jason’s opinion but also reflect negatively on Tom’s own opinion—Tom might lose confidence in his own opinion. In contrast, if Tom disagrees with angry Alicia, whose opinion Tom thinks is driven by emotionality, this might discredit Alicia’s opinion and reflect positively on Tom’s own opinion. This latter explanation would predict that, not only would Tom not lose confidence, but that Tom might become even more confident in his own opinion. The outcomes of this process would be that angry (vs. not angry) men exert more social influence because they are perceived as more competent and, as a result, drive others to become less confident in their own opposing opinion. In contrast, angry (vs. not angry) women would exert less social influence because they are perceived as more emotional and, as a result, drive others to become more confident in their own opposing opinion.

### Overview of Present Study

The current knowledge about anger expression and social influence falls short because we do not know whether expressing anger can have different effects on social influence for men and women. Despite extensive research regarding how a target’s gender can affect a perceiver’s recognition of the target’s emotion (Hess, Adams, Grammer, & Kleck, 2009), emotion stereotypes (Hess et al., 2007), and perceptions of the target (e.g., Brescoll & Uhlmann, 2008; Hutson-Comeaux & Kelly, 2002; Lewis, 2000), the downstream consequences of these effects on social influence have not been investigated. Research demonstrating differences in how male and female anger is perceived is troubling, in part, because of the untested assumption that these differences translate into women having less influence than men in society. We tested this assumption by designing an experimental test of these theoretically derived predictions in the applied context of jury decision making. Examining the differential effects of men versus women’s anger expression on social influence during mock jury deliberation, along with potential mediators of these influences, can have theoretical implications for social influence, gender stereotyping, emotion expression, and judgment and decision making as well as practical applied implications for how and how not to achieve social influence during group decision making, depending on one’s gender.

We also tested whether expressing fear would affect social influence during mock jury deliberation. We chose to compare anger expression to fear expression for several reasons. The primary reason was theoretical: Although anger and fear are similar in their negative valence, fear is considered stereotypical for women and anger is considered counter-stereotypical for women (e.g., Fabes & Martin, 1991). Further, women are stereotyped as excessively emotional overall (e.g., Fabes & Martin, 1991; for review see Hess, Adams, & Kleck, 2007). Thus, fear and anger expression provide a convenient comparison to test whether women lose social influence (a) when they express stereotypical emotion (i.e., fear), (b) when they express counterstereotypical emotion (i.e., anger), or (c) whenever they express negative emotion (i.e., both anger and fear relative to no emotion control). Because prior research has demonstrated that women are often penalized for behaving in a dominant manner (Carli, 2001) or
violating gender stereotypes (Heilman, Wallen, Fuchs, & Tamkins, 2004; Rudman & Fairchild, 2004), we expected that women would be penalized for expressing anger (a dominant emotion that violates gender stereotypes), but not for expressing fear (a nondominant emotion that confirms gender stereotypes). The secondary reason for including a fear condition was practical: Fear is also an emotion relevant to a gruesome murder trial and therefore is somewhat likely to be expressed during deliberation.

Hypotheses

In a controlled experiment involving mock jury deliberation, a computerized confederate (i.e., a “holdout”) presented a minority opinion that contradicted the opinion of the participant and four other computerized confederates. We hypothesized that after a male holdout expressed the contradictory opinion with anger, he would be perceived as more credible, which in turn would lead participants’ confidence in their own opinion to drop significantly (relative to a pre-emotion-expression baseline). In contrast, after a female holdout expressed the exact same contradictory opinion with anger, she would be perceived as more emotional, which in turn would lead participants to become significantly more confident in their own opinion (relative to a pre-emotion-expression baseline). Given that that it is notoriously difficult for opinion minorities to influence the majority (Moskowitz & Chaiken, 2001), we did not expect participants’ confidence to change during deliberation when the holdout expressed no emotion or the non-dominant negative emotion control (fear).

Method

Participants

Participants were 244 jury-eligible undergraduates participating for course credit who completed all measures. We excluded 20 participants (8%) for reporting suspicion that the interaction was fake and 14 additional participants (6%) for failing holdout gender manipulation checks. The final sample (N = 210) was 65% women (Mage = 19 years; SDage = 3), and ethnically diverse (31% Asian, 28% Hispanic, 27% White, 8% African American, 6% Other).

Design

The current study consisted of a 2 (Holdout gender: male, female) × 3 (Holdout emotion expression: no emotion, anger, fear) × 3 (Deliberation time-point: Pre-Deliberation baseline, Pre-Emotion Round 1, Post-Deliberation) mixed design with holdout gender and emotion expression varying between subjects and deliberation time-point varying within subjects.

Materials

Trial stimulus. The trial stimulus was based on a real case (R. v. Valevski, 2000) in which a man was tried for murdering his wife. The prosecution claimed that the man murdered his wife by slitting her throat; the defense claimed that the victim killed herself as a result of depression. Written descriptions of the opening and closing statements and testimony from eyewitnesses and expert witnesses were presented on a computer screen using Qualtrics. The presentation included two photographs of the crime scene from the actual case evidence (previously used by Bright & Goodman-Delahunty, 2006) and several additional photographs found online that were not part of the real case (i.e., photographs ostensibly of the defendant, victim, and the murder weapon). The evidence presentation lasted for 17 minutes. In a prior study that included an almost identical evidence presentation, we found a 62% conviction rate, indicating that the evidence was ambiguous enough to allow for fluctuations in verdict confidence. The jury instructions were modified from actual Illinois pattern jury instructions for first-degree murder.

Deliberation script. The mock jury deliberation script consisted of comments from five computerized confederates that simulated an online conversation. The confederates’ comments were drawn from a previous pilot study that we conducted, in which we asked undergraduates to report reasons for their chosen verdicts to the same trial stimulus. Thus, the comments were representative of real college students’ actual reasoning and impressions of this case in their own language. The comments included arguments in support of the computerized confederates’ verdicts based on the case evidence they read, as well as comments and questions directed at the other jurors. The deliberation rounds were realistically programmed such that the holdout referred directly to other confederates and the participant by username during the interaction. Because the fictional holdout needed to always be in opposition to the participants’ verdict choices, participants who voted guilty at the onset read a script in which four jurors agreed (i.e., voted guilty) and one juror disagreed (i.e., voted not guilty). In contrast, participants who voted not guilty at the onset read a script in which four jurors voted not guilty, and one juror voted guilty. The five computerized confederate mock jurors’ comments were held constant within the “holdout voting guilty” version and within the “holdout voting not guilty” version of the deliberation script.

The holdout had either a male (JasonS) or female (AliciaS) username. The other four usernames were held constant across conditions and gender neutral (e.g., “JJohnson,” “syoun96”). The first round of deliberation comments included no expressions of emotion and served as a pre-emotion baseline in which participants were aware they were in the majority with a male or female holdout, but had not yet witnessed the holdout expressing emotion (i.e., “Pre-Emotion Round 1”). Starting with Round 2, holdout emotion was manipulated by inserting clear expressions of anger or fear into the holdout’s comments (or no emotion). Participants read the same arguments from the holdout across all emotion conditions, with either (a) no emotion expressed, (b) with some words in capital letters and statements unambiguously reflecting that the holdout was angry (Demoulin et al., 2004), or (c) with statements unambiguously reflecting that the holdout was fearful. Emotion statements were inserted into Rounds 2–7 (e.g., “Seriously, this just makes me angry . . . .” “Ok, this is getting really frustrating . . . .”, “ugh this whole thing really creeps me out . . . .”, “it scares me to think about how . . . .”).

Measures

Social influence. We operationalized social influence as fluctuations in participants’ confidence about their initial verdict choice (i.e., the extent to which participants started doubting their opinion) while deliberating with the holdout (see Figure 1). One
item assessed jurors’ verdicts (not guilty vs. guilty) and another assessed confidence in their verdicts from 0% (not at all confident) to 100% (completely confident). Participants were instructed that their co-jurors would see only their verdict choice and not their confidence level. For analyses, we multiplied participants’ confidence scores by +1 for those who kept their original verdict and by −1 for those who changed their verdict. This yielded a “confidence in original verdict” measure ranging from −11 (100% confident in the holdout’s verdict) to +11 (100% confident in participant’s original verdict). Thus, lower scores reflect decreased confidence in their original pre-deliberation opinion (i.e., more social influence); higher scores reflect greater confidence in their original predeliberation opinion (i.e., less social influence).

We did not use participants’ raw confidence scores (without accounting for verdict) because some of the participants (7%) changed their verdict during deliberation. Thus, the measure must take into account the verdict in which they are reporting confidence to accurately capture the construct of social influence (i.e., the extent to which they became more or less confident in their original verdict). A participant who is 100% confident in their original verdict would be exhibiting very low social influence, whereas a participant who is 100% confident in the verdict the holdout is advocating would be exhibiting very high social influence—if we used raw confidence scores this difference would be lost.

**Perceptions of holdout emotionality.** Participants rated the extent to which each of their five “co-jurors” was emotional and expressed negative emotion on 5-point scales with verbal scale-point labels (e.g., not at all emotional, somewhat emotional, emotional, very emotional, extremely emotional) coded as 1 through 5 for analyses (Cronbach’s alpha = .59, M = 1.16). The participants rated all five of their co-jurors to avoid making it obvious that we were interested in their reactions to the holdout.

**Perceptions of holdout credibility.** Participants rated the extent to which each of their five co-jurors was trustworthy, influential, likeable, competent, credible, persuasive, and rational on 5-point scales with verbal scale-point labels (e.g., not at all trustworthy, somewhat trustworthy, trustworthy, very trustworthy, extremely trustworthy) coded as 1 through 5 for analyses. Participants also rated how high in quality they perceived their co-jurors’ arguments to be on a 5-point scale with verbal scale-point labels (e.g., very low quality, somewhat low quality, neither low nor high quality, somewhat high quality, very high quality) coded as 1 through 5 for analyses. These items assessing perceptions of the holdout formed a reliable Perceived Credibility Scale (Cronbach’s alpha = .87, M = 2.79, SD = .85).

**Manipulation, suspicion checks and demographics.** Manipulation check items asked participants to report what gender they believed [AliciaS/JasonS] to be, the extent to which the holdout was angry, and the extent to which the holdout was fearful on 5-point scales with verbal scale-point labels (e.g., not at all angry, somewhat angry, angry, very angry, extremely angry) coded as 1 through 5 for analyses. A yes/no suspicion probe assessed whether the participants noticed anything strange about the study and, if so, an open-ended item asked them to explain. Finally, we assessed participants’ gender, age, and race/ethnicity.

**Procedure**

Participants arrived at a computer laboratory in groups of 2 to 18 to participate in a computer-mediated mock-jury simulation. They learned that participants had been assigned to one of two computer laboratories on campus that were participating at the same time, and that they would be randomly assigned to virtual groups of six-person juries with people from both laboratories. To ensure the realism of this detail the experimenters (a) checked the participants’ identification numbers to “make sure they are in the correct room” and (b) set cell phone alarms to stage “incoming phone calls” with the “other lab,” ostensibly to make sure that both rooms started at the same time. This precluded participants from drawing inferences about which five participants were in their group or from being suspicious when there were less than six participants in the room.

See Figure 2 for experimental procedure. Participants viewed a presentation of evidence from a murder trial and read jury instructions on their individual computer screens. Next, they were asked to enter a username and were told that the groups were being formed randomly; they saw an animated progress wheel for a few
seconds to lend realism to this instruction. Then, they saw a list of six “usernames,” including their own, that represented their “randomly assigned group” and were instructed to deliberate with their group until they reached a unanimous verdict. To begin, participants completed pre-deliberation verdict and confidence measures, along with comments to their group members justifying their initial verdict. Next, each participant ostensibly began an online interaction with five other mock jurors. In reality, participants read a scripted interaction with five computerized confederates. As soon as participants submitted their initial verdicts and comments to the group, the screen displayed the six usernames, each with a verdict choice and comments. The interaction always included four confederates who agreed with the participant and one who disagreed (i.e., the holdout juror). The holdout was either a man or a woman (i.e., Jason or Alicia). After reading the confederates’ comments, each participant again completed measures of verdict confidence and comments describing reasons for his or her verdict (i.e., “Round 1 Pre-Emotion Baseline”). Beginning with Round 2 of deliberation, the holdout expressed his or her opinion with no emotion, anger, or fear. This was repeated for 7 rounds. After four rounds—in all conditions—one of the majority confederates changed their verdict to side with the holdout, which has been found to increase a minority’s ability to convince the majority (Wood et al., 1994), and was also intended to increase realism. This particular juror did not present any actual arguments; only vapid comments such as “I agree with [holdout name].” Deliberation ended after 7 rounds. Participants completed final private post-deliberation measures of verdict confidence, perceptions of their co-jurors, suspicion and manipulation checks, and demographic information.

Results

Preliminary Analyses

Overall, 43% of participants voted guilty pre-deliberation, which did not depend on holdout emotion condition, $\chi^2(1, N = 209) = 3.64, p = .16$, holdout gender condition, $\chi^2(1, N = 209) = .03, p = .87$, or participant gender, $\chi^2(N = 209) = .40, p = .46$. Although participants’ confidence in their initial opinion fluctuated greatly during the interaction, the fluctuation was not extreme enough for most participants to change their initial verdict from pre- to post-deliberation—only 7% did so.

Deliberation script version. Although the five computerized confederates’ comments were held constant within the “holdout voting guilty” version and within the “holdout voting not guilty” version, we wanted to ensure that the persuasiveness of the holdout’s arguments did not differ between the “holdout voting guilty” and “holdout voting not guilty” versions of the deliberation script. In other words, we tested whether the persuasiveness of the holdout’s comments depended on participants’ initial verdict preference. Participants who read the “holdout voting guilty” version rated the holdout as similarly persuasive ($M = 2.01, SD = 1.20, n = 113$) as those who read the “holdout voting not guilty” version ($M = 2.05, SD = 1.16, n = 87$), $t(198) = .22, p = .83$.

Further, there were no differences in participants’ confidence as a function of the script version, nor did the script version interact with any of our independent variables to affect social influence (i.e., changes in participants’ confidence in their original verdict). More specifically, we conducted a 2 (Holdout gender: male, female) $\times$ 3 (Emotion expression: no-emotion, anger, fear) $\times$ 2 (Participant initial verdict: not guilty, guilty) $\times$ 3 (Deliberation time point: Pre-Deliberation baseline, Pre-Emotion Round 1, Post-Deliberation) mixed ANOVA and found that participants’ initial verdict and any interactions with this variable were nonsignificant, all $F$s $\leq 1.03, ps \geq .36$. Thus, the effect of our variables on social influence did not differ as a function of whether the participant began deliberations with a guilty or not guilty verdict. In other words, it was not easier for holdouts to exert influence when they were arguing for one verdict more so than the other. Thus, given that whether the holdout was arguing for a guilty or not guilty verdict (i.e., the participants’ initial verdict preference) did not (a) affect how persuasive the arguments were to participants, (b) affect how confident the participants were overall, or (c) moderate the
effect of any of our independent variables, we collapsed across
holdout script version (i.e., participants’ initial verdict preference)
for all analyses.

Manipulation checks. Two 2 (Holdout Gender: male, fe-
male) × 3 (Holdout Emotion: no emotion, anger, fear) between-
subjects ANOVAs revealed that the emotion manipulation signif-
ificantly affected participants’ perceptions of the holdout’s anger
and fear. Planned comparisons revealed that, as intended, holdouts
in the anger condition were perceived as significantly more angry
than participants in the control and fear conditions. Further, as
intended, holdouts in the fear condition were perceived as signif-
ificantly more fearful than participants in the control and anger
conditions. Thus, our holdout emotion manipulation was success-
ful. See Table 1 for all descriptive statistics and Table 2 for
ANOVA test statistics, effect sizes, and confidence intervals. Nei-
ther the gender manipulation nor the gender by emotion interaction
were significant for perceptions of the holdout’s anger or fear.

Social Influence

We tested our hypotheses with a 2 (Holdout Gender: male,
female) × 3 (Holdout Emotion: none, anger, fear) × 3 (Deliber-
ation Time Point: pre-deliberation, after first no-emotion round 1,
post-deliberation) mixed ANOVA on social influence (i.e., partic-
ipants’ confidence in their original verdict). See Table 3 for all
descriptive statistics and Table 4 for all ANOVA test statistics,
effect sizes, and confidence intervals. All main effects and two-
way interactions were not significant. The predicted three-way
interaction was significant. As expected, the simple holdout gender
by deliberation interaction was not significant in the control and
fear conditions. Participants’ confidence in their original verdict
did not change over the course of deliberation—regardless of
holdout gender—when the holdout expressed no emotion or fear.
Thus, as expected, in the nonanger conditions, the holdout exerted
no influence on the participants’ confidence in their initial verdict.

In contrast, as predicted, the holdout gender by deliberation
simple interaction was significant when the holdout expressed
anger. Simple effects analyses revealed that when a man expressed
anger, the linear effect of deliberation time point was superseded
by a significant quadratic effect. More specifically, participants
became more confident in their initial verdict after reading the first
pre-emotion round of comments (although this increase was not
significant). After a man holdout expressed anger, however, par-
ticipants became significantly less confident in their initial verdict
choice. Thus, participants became more confident in their own
opinion after learning they were in the majority (from pre-
deliberation to Round 1), but then started doubting their own
opinion significantly after the male holdout expressed anger (i.e.,
from Round 1 to post-deliberation).

In contrast, when a female holdout expressed anger within the
exact same comments, there was only a significant positive linear
effect across deliberation time points. That is, when a female
holdout expressed anger, participants become significantly more
confident in their own opinion over the course of deliberation. The
quadratic effect was not significant when female holdouts ex-
pressed anger. In summary, men were able to exert more social
influence on participants by expressing anger—even when up
against a 5-person majority; yet women were not only deprived of
this influence gain, but lost influence after expressing anger.

Examining the interaction in this fashion tested our hypothesis
that expressing anger would help men gain influence, but would
detract from women’s influence. Re-examining the interaction
pattern the other way (i.e., testing the gender influence gap at each
time point in the anger condition) reveals the practical importance
of these findings by demonstrating how anger expression creates a
gender gap in social influence that was not present in the absence
of anger. In the anger condition there was no gender gap in
influence pre-deliberation, \(F(1, 198) = .02, p = .90\), partial \(\eta^2 =
.0001, 90\% \text{CIs} = .00, .004\), or after Round 1 when no anger had
been expressed yet, \(F(1, 198) = .04, p = .85\), partial \(\eta^2 = .0002,
90\% \text{CIs} = .00, .01\)—but after the holdouts expressed anger (i.e.,
post-deliberation) the gender gap was significant, \(F(1, 198) =
6.06, p = .01\), partial \(\eta^2 = .03, 90\% \text{CIs} = .003, .08\): People were
significantly less confident in their original verdict when an angry
man presented an opposing argument compared with an angry
woman—even though they were presenting the same arguments.

To determine whether the gender gap in influence was driven
primarily by male participants, we added participant gender and all
possible interactions to the main analysis reported above. The
three-way interaction effect reported above did not differ as a
function of participant gender, \(F(4, 380) = 1.23, p = .29\), partial

<table>
<thead>
<tr>
<th>Holdout emotion expression</th>
<th>Holdout gender</th>
<th>n</th>
<th>Perceived anger</th>
<th>Perceived fear</th>
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</thead>
<tbody>
<tr>
<td>No emotion</td>
<td>Male holdout</td>
<td>37</td>
<td>2.24 (1.21)</td>
<td>1.49 (1.02)</td>
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<tr>
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<td>Female holdout</td>
<td>52</td>
<td>2.13 (1.14)</td>
<td>1.29 (0.57)</td>
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<tr>
<td></td>
<td>Total</td>
<td>89</td>
<td>2.18 (1.16)</td>
<td>1.37 (0.79)</td>
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<tr>
<td>Fear</td>
<td>Male holdout</td>
<td>11</td>
<td>2.00 (1.34)</td>
<td>3.82 (1.47)</td>
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<tr>
<td></td>
<td>Female holdout</td>
<td>29</td>
<td>1.66 (1.11)</td>
<td>3.45 (1.48)</td>
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<tr>
<td></td>
<td>Total</td>
<td>40</td>
<td>1.75 (1.17)</td>
<td>3.55 (1.47)</td>
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<tr>
<td>Anger</td>
<td>Male holdout</td>
<td>32</td>
<td>4.44 (.91)</td>
<td>1.37 (1.04)</td>
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<tr>
<td></td>
<td>Female holdout</td>
<td>41</td>
<td>4.56 (.67)</td>
<td>1.68 (1.21)</td>
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<tr>
<td></td>
<td>Total</td>
<td>73</td>
<td>4.51 (.78)</td>
<td>1.55 (1.14)</td>
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<tr>
<td>Total</td>
<td>Male holdout</td>
<td>80</td>
<td>3.09 (1.57)</td>
<td>1.76 (1.36)</td>
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<td>Female holdout</td>
<td>122</td>
<td>2.84 (1.59)</td>
<td>1.93 (1.37)</td>
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<tr>
<td></td>
<td>Total</td>
<td>202</td>
<td>2.94 (1.58)</td>
<td>1.87 (1.37)</td>
</tr>
</tbody>
</table>
1.11, $p$ with holdout gender or holdout emotion were significant, however, given that adding participant gender to the ANOVA design cut our cell sizes considerably thereby decreasing our power.

Table 2
ANOVA Table for the Effects of Holdout Emotion Expression and Holdout Gender on Perceptions of Holdout Anger and Fear

<table>
<thead>
<tr>
<th>Dependent measure</th>
<th>Independent variables effects</th>
<th>Sum of squares</th>
<th>$df$</th>
<th>Mean square</th>
<th>$F$</th>
<th>$p$</th>
<th>Effect size</th>
<th>Confidence intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived anger</td>
<td>Holdout emotion</td>
<td>262.32</td>
<td>2</td>
<td>131.16</td>
<td>119.35</td>
<td>&lt;.001</td>
<td>$\eta^2_p$ = .55</td>
<td>90% = [.47, .61]</td>
</tr>
<tr>
<td></td>
<td>Anger vs. No emotion</td>
<td>217.18</td>
<td>1</td>
<td>217.18</td>
<td>197.61</td>
<td>&lt;.001</td>
<td>$d = 2.36$</td>
<td>95% = [1.93, 2.74]</td>
</tr>
<tr>
<td></td>
<td>Anger vs. Fear</td>
<td>196.39</td>
<td>1</td>
<td>196.39</td>
<td>178.70</td>
<td>&lt;.001</td>
<td>$d = 2.97$</td>
<td>95% = [2.45, 3.56]</td>
</tr>
<tr>
<td></td>
<td>Holdout gender</td>
<td>.48</td>
<td>1</td>
<td>.48</td>
<td>.44</td>
<td>.51</td>
<td>$d = .16$</td>
<td>95% = [.12, .44]</td>
</tr>
<tr>
<td></td>
<td>Holdout emotion $\times$ Holdout gender</td>
<td>1.30</td>
<td>2</td>
<td>.65</td>
<td>.59</td>
<td>.55</td>
<td>$\eta^2_p$ = .006</td>
<td>90% = [.00, .03]</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>215.39</td>
<td>196</td>
<td>1.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived fear</td>
<td>Holdout emotion</td>
<td>127.15</td>
<td>2</td>
<td>63.57</td>
<td>54.39</td>
<td>&lt;.001</td>
<td>$\eta^2_p$ = .36</td>
<td>90% = [.27, .43]</td>
</tr>
<tr>
<td></td>
<td>Fear vs. No emotion</td>
<td>131.06</td>
<td>1</td>
<td>131.06</td>
<td>112.11</td>
<td>&lt;.001</td>
<td>$d = 2.10$</td>
<td>95% = [1.66, 2.58]</td>
</tr>
<tr>
<td></td>
<td>Fear vs. Anger</td>
<td>103.57</td>
<td>1</td>
<td>103.57</td>
<td>88.60</td>
<td>&lt;.001</td>
<td>$d = 1.52$</td>
<td>95% = [1.16, 2.05]</td>
</tr>
<tr>
<td></td>
<td>Holdout gender</td>
<td>.30</td>
<td>1</td>
<td>.30</td>
<td>.25</td>
<td>.61</td>
<td>$d = -.12$</td>
<td>95% = [-.14, .16]</td>
</tr>
<tr>
<td></td>
<td>Holdout emotion $\times$ Holdout gender</td>
<td>3.58</td>
<td>2</td>
<td>1.79</td>
<td>1.53</td>
<td>.22</td>
<td>$\eta^2_p$ = .01</td>
<td>90% = [.00, .05]</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>229.10</td>
<td>196</td>
<td>1.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Following Lakens’ (2013) recommendations, we calculated Cohen’s $d$ values for all two-group comparisons and partial $\eta^2$ ($\eta^2_p$) values for all effects that included more than two groups, as well as confidence intervals associated with these effect sizes. Because we calculated the partial $\eta^2$ values based on ANOVA $F$ values, we followed recommendations to use 90% CIs rather than 95% CIs (for more detailed explanations for this recommendation see Lakens, 2013; Smithson, 2001).

$\eta^2_p = .01$, 90% CIs = .00, .03. Although men ($M = 9.45, SD = 4.35$) were more confident in their original verdict compared with women overall ($M = 7.91, SD = 3.33$), $F(2, 380) = 16.70, p < .001$, partial $\eta^2 = .08$, 90% CIs = .04, .12, none of the interactions with holdout gender or holdout emotion were significant, $F_{S} \leq 1.11, p_{S} \geq .29$. These results should be interpreted with caution, however, given that adding participant gender to the ANOVA design cut our cell sizes considerably thereby decreasing our statistical power.

Mediation Analyses

We used Hayes’s (2012) PROCESS macro for SPSS to test our mediation hypotheses. We utilized Model 6, which allows for multiple mediators operating in serial fashion. The model estimates all possible indirect effects of anger expression on social influence through perceptions of the holdout’s emotionality and credibility using 95% bias corrected bootstrap confidence intervals (10,000 samples). That is, this analysis tests all possible combinations of the potential mediators.

Female holdout. When the holdout was a woman, the effect of anger expression on social influence operated through only perceptions of holdout emotionality, indirect effect = 2.15, 95% CIs = .70, 4.53 (see Figure 3). No other indirect effects were significant. Thus, when a woman holdout expressed anger, she was perceived as more emotional, which increased participants’ confidence in their own opinion. Given these results, we tested a multiple mediators operating in serial fashion.

Table 3
Mean (SD) Social Influence as a Function of Holdout Emotion Expression and Holdout Gender at Three Deliberation Time Points

<table>
<thead>
<tr>
<th>Holdout emotion expression</th>
<th>Holdout gender</th>
<th>$n$</th>
<th>Pre-deliberation</th>
<th>Pre-emotion deliberation round 1</th>
<th>Post-deliberation</th>
</tr>
</thead>
<tbody>
<tr>
<td>No emotion</td>
<td>Male holdout</td>
<td>37</td>
<td>7.68 (1.76)</td>
<td>8.43 (2.48)</td>
<td>8.38 (4.35)</td>
</tr>
<tr>
<td></td>
<td>Female holdout</td>
<td>53</td>
<td>7.92 (2.23)</td>
<td>8.38 (3.16)</td>
<td>8.15 (4.90)</td>
</tr>
<tr>
<td>Fear</td>
<td>Male holdout</td>
<td>12</td>
<td>7.67 (2.42)</td>
<td>8.58 (2.50)</td>
<td>9.17 (2.04)</td>
</tr>
<tr>
<td></td>
<td>Female holdout</td>
<td>29</td>
<td>8.24 (1.97)</td>
<td>8.38 (3.78)</td>
<td>8.93 (3.89)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>41</td>
<td>8.07 (2.07)</td>
<td>8.43 (3.43)</td>
<td>9.00 (3.43)</td>
</tr>
<tr>
<td>Anger</td>
<td>Male holdout</td>
<td>32</td>
<td>8.59 (1.58)</td>
<td>9.16 (1.46)</td>
<td>7.25 (6.15)</td>
</tr>
<tr>
<td></td>
<td>Female holdout</td>
<td>41</td>
<td>8.29 (1.63)</td>
<td>9.12 (1.45)</td>
<td>9.58 (6.12)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>73</td>
<td>8.42 (2.61)</td>
<td>9.14 (1.45)</td>
<td>8.56 (4.31)</td>
</tr>
<tr>
<td>Total</td>
<td>Male holdout</td>
<td>81</td>
<td>8.04 (1.84)</td>
<td>8.74 (2.14)</td>
<td>8.05 (4.92)</td>
</tr>
<tr>
<td></td>
<td>Female holdout</td>
<td>123</td>
<td>8.12 (1.97)</td>
<td>8.63 (2.89)</td>
<td>8.81 (3.83)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>204</td>
<td>8.09 (1.91)</td>
<td>8.67 (2.61)</td>
<td>8.51 (4.30)</td>
</tr>
</tbody>
</table>

Note. We operationalized social influence as fluctuations in participants’ confidence about their initial verdict choice (i.e., the extent to which participants started doubting their opinion) while deliberating with the holdout. The measure ranged from $-11$ (100% Confident in the Holdout’s Verdict) to $+11$ (100% Confident in Participant’s Original Verdict). Thus, lower scores reflect decreased confidence in their original pre-deliberation opinion (i.e., more social influence); higher scores reflect greater confidence in their original pre-deliberation opinion (i.e., less social influence).
Note. Following Lakens’ (2013) recommendations, we calculated Cohen’s $d$ for all between-group two-group comparisons and comparisons of repeated measures $d$ ($d_{rm}$) were calculated for all within-group two-group comparisons. For all effects that included more than two groups partial eta$^2$ ($\eta_{p}^2$) values were calculated. For all between-subjects effects, confidence intervals associated with the effect sizes were calculated. Because we calculated partial eta$^2$ based on ANOVA $F$ values, we followed recommendations to use 90% CIs rather than 95% CIs (for more detailed explanations for this recommendation see Lakens, 2013; Smithson, 2001).

potential explanation for why perceptions of holdout emotionality on social influence did not operate through perceptions of holdout credibility for female holdouts. Specifically, we tested whether a woman’s credibility becomes irrelevant when she explicitly expresses anger. That is, perhaps once a woman expresses anger people no longer consider her credibility when determining whether they are influenced by her opinion. Indeed, a post hoc regression analysis that included perceptions of the female holdouts’ credibility and emotionality as predictors of social influence revealed that, in the no-emotion control condition, being perceived as more emotional decreased the female holdout’s social influence (i.e., increased participants’ confidence in their own opinion), $B = 2.12, SE = .61, p = .01$, and being perceived as more credible significantly increased the female holdout’s social influence, $B = -1.90, SE = .77, p = .02$. Yet, when the female holdout explicitly expressed anger, perceptions of her emotionality continued to predict social influence marginally, $B = .46, SE = .24, p = .06$, but perceptions of her credibility did not, $B = -.40, SE = .25, p = .12$.

**Male holdout.** The analysis revealed two significant indirect effects when the holdout was a man. First, the effect of anger expression on social influence operated through perceptions of the holdout’s emotionality, which in turn predicted their perceptions of the holdout’s credibility, indirect effect = .56, 95% CIs = .07, .68 (See Figure 4). That is, when a man expressed anger, participants perceived him as more emotional, and in turn as less credible, which decreased his level of influence. Yet, there was an additional competing path (See Figure 5). The indirect effect of anger expression on social influence through perceived credibility was also significant, indirect effect = -.79, 95%
them expressed anger. Expressing anger created a gender gap in course of deliberation was when a woman who disagreed with participants became a female holdout’s influence. In fact, the only condition in which did female anger not increase influence, it actually though they were part of a 5–1 majority. In stark contrast, not only for men. It is notoriously difficult for an opinion making. We demonstrated that anger expression is a powerful tool that it made people significantly doubt their own opinion even that the latter effect explains the direct effect of male anger on influence better than the former in the current study.

One could argue that the order of the two mediators might be reversed: Perhaps expressing anger affects perceptions of the holdout’s credibility, which in turn affects the extent to which they label the holdout as emotional. We ran an alternative model with the order of the two mediators reversed first for male holdouts and then for female holdouts. The indirect effect of anger expression on participants’ confidence through perceptions of holdout credibility and then emotionality was not significant for male, indirect effect = −0.03, 95% CIs = −0.48, −0.03, or female, indirect effect = .004, 95% CIs = −.04, .16, holdouts. Thus, the original order of the mediators (emotionality predicting credibility) fit our data better than the alternative models.

Discussion

Our results provide the first experimental evidence in support of frequent anecdotal accounts and media speculation that women’s anger expression is used against them during group decision-making. We demonstrated that anger expression is a powerful persuasion tool for men. It is notoriously difficult for an opinion minority to influence a majority because they have to overcome the heuristic that their opinion is less valid (Moskowitz & Chaiken, 2001). The male holdout’s anger was such a powerful persuasion tool that it made people significantly doubt their own opinion even though they were part of a 5–1 majority. In stark contrast, not only did female anger not increase influence, it actually detracted from a female holdout’s influence. In fact, the only condition in which participants became more confident in their own opinion over the course of deliberation was when a woman who disagreed with them expressed anger. Expressing anger created a gender gap in influence that did not exist before the holdout started expressing anger or when the holdouts expressed fear or no emotion. Further, this effect was specific to anger and not fear, which reveals that the current results are not due to women being penalized for being more emotional in general. Finally, our findings did not differ as a function of whether the participant was a part of a majority supporting a guilty versus not guilty verdict.

We also identified a psychological explanation for why anger had a different effect on social influence for men and women: people drew different inferences about female versus male anger, which affected how participants viewed their own opinion. When women expressed anger (vs. no anger) they were perceived as more emotional, which made people more confident in their own opinion. Of note, perceptions of the female holdouts’ credibility did not play a role in this process. Although perceptions of female holdouts’ emotionality and credibility predicted their influence over participants when they were not explicitly expressing emotion; when female holdouts expressed anger perceptions of their credibility were no longer predictive of how much influence they had over participants’ opinions. Thus, when a woman expresses anger this does not just make her seem less credible, but seems to make assessing her credibility irrelevant—instead, participants just became more confident in their own opinion.

The process was more complicated for men. Expressing anger did make them look more emotional, which did decrease their credibility. Yet, a competing psychological process ensured the male holdout’s influence: male anger expression also increased credibility, which made participants less confident in their own opinion. The latter effect won out, given that ultimately male anger reduced participants’ confidence in their own opinion overall. We do not believe that this theoretical explanation precludes others that might help explain the effect, such as women being penalized for behaving in a dominant manner (Carli, 2001) or violating gender stereotypes (Heilman, Wallen, Fuchs, & Tamkins, 2004; Rudman & Fairchild, 2004) by expressing anger. We would argue, however, that our results cannot be fully explained by violating gender stereotypes, given that men were not penalized for expressing fear, which is counterstereotypical (e.g., Fabes & Martin, 1991). This work thus demonstrates that social influence is determined, in part, by the interactive effect between what emotion is expressed and by whom, with different inferences underlying their influences.

Figure 4. Serial mediation model path coefficients for male holdout condition. Gray boxes and bold black lines represent the significant indirect effect; white boxes and gray lines were included in the model, but not part of the significant indirect effect. **p < .05. ***p < .01.

Figure 5. Serial mediation model path coefficients for male holdout condition. Gray boxes and bold black lines represent the significant indirect effect; white boxes and gray lines were included in the model, but not part of the significant indirect effect. *p < .05. **p < .01. ***p < .01.
Caveats and Future Directions

Mock jury studies will never be completely representative of the real jury deliberation process. We attempted, however, to design the study in a manner that would make generalizations to the legal arena possible. For example, the ecological validity of the current study is increased by the use of testimony based on an actual trial and the inclusion of opening and closing statements, a detailed coroner’s report, and jury instructions that would be used in such a case in Illinois. We also ensured that the mock jurors were jury eligible (over 18 and U.S. citizens). Although the undergraduate sample is not as diverse as the actual jury pool, the undergraduate sample used in this research was much more ethnically diverse and older than many college freshman samples—in fact both the Asian and Hispanic subsamples were larger than the White subsample. Further, a review of jury-decision-making literature suggests that there are few differences in the mock-trial judgments of undergraduates and community members (Bornstein, 1999). There are exceptions (e.g., Wiener, Krauss, & Lieberman, 2011), but they tend to be demonstrated on participants’ attitudes and legal judgments, whereas the current study was focused on the process by which gender shapes social influence during group discussion. That is, we were not focused on what their opinions were, but the extent to which they change their mind when men and women express anger. Further, a recent meta-analysis found that sample (student vs. community vs. venireperson) did not moderate the effect of any independent variables tested (Devine & Caughlin, 2014). Thus, there is no theoretical nor empirical reason to believe that this process differs according to sample type—if anything, we would expect that the gender effects on social influence we found would be even stronger in an older, more traditional, and less liberal sample. That being said, replicating these findings with a nonstudent sample is an important step for future research.

Although the computer-mediated deliberation was ideal for conducting a tightly controlled test of our hypotheses by enabling us to hold everything constant except the independent variables—which is particularly difficult in group discussion tasks—the results might have been different if we had used actual face-to-face interactions. For example, the computer-mediated paradigm does not take into account the role of nonverbal components of anger expression. Further, the computer-mediated nature of the interaction might have changed the process through which the jury deliberated—it might have made the conversation more verdict-driven than it would have otherwise been. Although these factors might have changed the nature of the interaction, we would argue that there is no reason to predict that these aspects of the process would, specifically, moderate the effect of anger expression and gender on influence and attitude change. That is, we would expect that men would gain influence and women would lose influence by expressing anger even in the context of a more evidence-driven jury. Testing whether the current results generalize to nonstudent samples and face-to-face interactions in which the holdouts are able to actually address group members’ comments are important next steps.

We believe that the current study constitutes “Stage 1 research” status (Diamond, 1997) that enabled us to make novel theoretical and applied contributions, and that we hope inspires future research to test the boundary conditions of these effects. For example, our study does not address whether there are gender differences in expressing pro-social emotions on social influence. Given that women are expected to experience more pro-social emotions than men, this would be another exciting area of future research. Future research could also test whether the current findings depend on gender composition, given that past research has demonstrated that mock jurors on female-majority juries were significantly less likely to exhibit the leniency bias (i.e., switch from a guilty to not guilty verdict) than were male-majority juries (Golding, Bradshaw, Dunlap, & Hodell, 2007).

One could argue that the detrimental effect of women expressing anger might be limited to a scenario in which a man is accused of murdering his wife. That is, female anger in this scenario might be perceived as a result of overidentification with the female victim and discredited—an effect that might not replicate across a different type of crime without a female victim. Although it is always important to replicate findings across case types, we would argue that this explanation cannot account for our findings. The pattern of our results generalized to the condition in which the female holdout is arguing against the female victim (i.e., for a not guilty verdict). That is, the angry (vs. not angry) woman holdout lost social influence, not only when the anger was in service of the female victim (i.e., a potentially discrediting overidentification effect), but also when she was angrily arguing against the husband of the female victim’s murder.

Theoretical Implications

Our results make several additional theoretical and methodological advances to the relatively small literature regarding emotion expression and social influence. First, the detrimental effects of anger expression on other forms of social influence (i.e., helping behavior, van Doorn et al., 2014; multiparty negotiations, van Beest et al., 2008) did not extend to male anger during a group consensus task—in fact, it reversed. Second, given that the male and female holdouts communicated with exactly the same words via typed text, our results show that women are penalized for anger even when controlling for potential gender differences in how women communicate anger or how they look when they express anger. Thus, different reactions to female (vs. male) anger expression cannot be attributable to women expressing anger less effectively or differently from men, but instead attributable to different reactions to the same opinions and anger expression coming from a woman versus a man. Third, we contributed to the minority influence literature by identifying a new factor that can actually help a male opinion minority influence the majority: anger expression. Finally, studies testing the effect of emotion expression often use brief stimuli that leave gender and emotionality as the only factors for participants to use in their judgments (e.g., three-sentence descriptions of a man or a woman overreacting emotionally, Hutson-Comeaux & Kelly, 2002; 1.5 minute-long videos of job interviews; Tiedens, 2001). We demonstrated the effect of anger expression and gender in a more ecologically valid context that exposed participants to a large amount of information that could influence their decisions: 17 minutes of trial evidence and seven rounds of deliberation arguments from five different group members. Amid all of those potential social influences, the subtle manipulation of whether a dissenting group member had a male or female name led to completely different reactions to their anger expression.
Applied Implications

Our results also have important applied implications. American juries were originally composed exclusively of White men. Women now serve on juries, but our results suggest that they might not have the same ability to exert influence over legal outcomes as do men when they express anger. There is no reason to believe that this effect is limited to mock jury deliberation—much of what we know about basic group decision-making originated from seminal papers utilizing jury paradigms (e.g., Kaplan & Miller, 1987; Nemeth, 1986; Sommers, 2006). Thus, these findings have important implications for other applied settings that rely on group decision making: high-school students working on projects, government advisory boards deciding to go to war, workplace groups deciding the trajectory of their department, and so forth. We entrust very important decisions to groups and reaching consensus often breeds frustration and anger expression. Our findings suggest that, in the decisions we are all most passionate about in society, including life-and-death decisions made by juries, women might have less influence than men. Our results lend scientific support to a frequent claim voiced by women, sometimes dismissed as paranoid: that people would have listened to her impassioned argument, had she been a man.

References


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