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**EXAMINING THE BOUNDARY CONDITIONS OF ACKNOWLEDGING
CONTEXTUALIZED EMOTION WITH WOMEN IN STEM INTERVIEWS**

A Thesis in

Psychology

by

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ABSTRACT

Displays of emotion in response to emotion-evoking events are often interpreted as evidence of people's stable dispositions. For women, emotion displays often further confirm a stereotype that women are overly emotional. The judgment that women are too emotional may be particularly harmful in contexts that emphasize rationality, such as Science, Technology, Engineering, and Mathematics (STEM) fields. Using an intervention, termed Acknowledging Contextualized Emotion (ACE), people can reduce an observer's likelihood of attributing their emotion displays to excessive emotionality. Study 1 examined whether the ACE intervention buffered the competence of women candidates interviewing in a video for either a STEM or non-STEM position. Study 2 examined whether participants evaluated candidates using the ACE intervention differently if participants believed they could be either accurate or inaccurate in their evaluation. Overall, results of both studies did not support hypotheses. In contrast to predictions, results of Study 1 revealed candidates were not perceived differently based on the job field for which they interviewed. In both Studies 1 and 2, regardless of instruction, ACE did not effectively buffer perceptions of competence for job candidates expressing nervousness as had been predicted. Results have implications for determining when and under what conditions ACE is and is not effective at buffering competence for those displaying emotion.

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INTRODUCTION

Emotions are common in high-stakes situations, such as when interviewing for a job or when speaking in public. Displays of emotion communicate important information to others. When displays of emotion are correctly understood as responses to situations of personal importance, social understanding can be facilitated. However, displays of emotion are often overgeneralized as evidence of people's enduring dispositions. Thus, although people do their best to regulate emotions, outward displays often lead to judgments that people displaying emotion are less than fully rational and competent (Averill, 1980; Frijda, 1986; Shields, 2005; Solomon 2008).

Interpreting the emotion of others as evidence of their emotional natures can have damaging implications for perceptions of others' competence. Competence is defined as a capacity to act constructively to achieve one's goals, and is related to traits such as efficacy and intelligence (Abele, Cuddy, Judd, & Yzerbyt, 2008). Perceptions of competence affect other important judgments of a person, such as their status (Fiske, Cuddy, Glick, & Xu, 2002) and job suitability (Howard & Ferris, 2006). Being judged as overly emotional can lead to the judgment that one is lacking in competence. For instance, in the workplace, both leaders and employees who were perceived as responding with poorly regulated emotion were deemed less effective at their jobs (e.g., Lewis, 2000; Madera & Smith, 2009). Interfering a person expressing everyday emotion has an overly emotional personality, therefore, has important and practical implications.

For women, typical displays of emotion in response to emotion-evoking situations are often also interpreted as confirming a stereotype that women in particular tend to have overly emotional dispositions (e.g., Brescoll & Uhlmann, 2008; Shields & Crowley, 1996; Smith, Brescoll, & Thomas, 2016). In the first of the following studies, I tested the novel hypothesis that

this stereotype may be particularly damaging in work contexts that emphasize rationality, such as Science, Technology, Engineering, and Mathematics (STEM) fields, where women are disproportionately underrepresented (e.g., Ceci, Williams, & Barnett, 2009) and stereotypically perceived to be a poor fit with these fields (Cheryan & Plaut, 2010).

The purpose of the following studies was to investigate when women's displays of emotion affected judgments of their perceived competence, and whether these judgments differed in a STEM as opposed to in a non-STEM field (Study 1). Below I review processes involved in the perceptions of others' emotion, describe a brief intervention an individual can use as a potential strategy to buffer competence when displaying emotion, and discuss stereotypes of women's emotionality and barriers for women in STEM fields. The following studies tested the prediction that using an intervention, acknowledging contextualized emotion (ACE), can neutralize the hypothesized negative effects of emotion stereotypes on perceived competence for women in STEM. Additionally, the studies examined the relation between using the intervention and perceptions of dispositional emotionality and excuse-making.

Perceptions of Others' Emotion

When interpreting the behavior of others we know little about, people frequently assume others' actions are caused more by their dispositions than by situational factors (e.g., Heider, 1958; Gilbert & Malone, 1995). Termed the fundamental attribution error, this bias leads people to discount the influence of external factors on others' behaviors and responses. Similarly, although emotion states are frequently caused or intensified by situational factors, people often believe emotional expressions are evidence of the stable personalities of others (e.g., Andersen, Glassman, & Gold, 1998; Johnson, Robinson, & Mitchell, 2004; Pizarro, 2000).

Observers use emotion cues and norms about the situation to make judgments about people's dispositions (Hareli & Hess, 2010), and people have a strong tendency to make dispositional attributions about others when presented with little information. People may be especially likely to judge emotional displays as evidence of others' dispositions because information about the context may be inaccessible or difficult to interpret (Gilbert, 1998; Gilbert & Malone, 1995). Furthermore, although people often assume they can accurately perceive the emotional states of others, observers may often be unaware of whether or not someone is experiencing an emotion (e.g., Savitsky & Gilovich, 2003), let alone aware of what is causing someone's emotion. Although people are less likely to make attributions about others that are automatically sensitive to context, directing people to contextual causes can disrupt this tendency (e.g., Krull & Erickson, 1995). One way to address the problem of perceivers misattributing the cause of emotion displays to people's dispositions, is to make the context more salient.

Using ACE to Change Perceptions of Others' Emotion

By using a strategy that emphasizes the role of the situation in causing an emotion, perceivers can be encouraged to take context into account when making attributions. Attribution models include context as a factor that can influence one's attribution of another person, but these models also reveal why it may be difficult to override the tendency to judge others based on dispositional factors. For instance, Trope (1986) developed a model of attribution in which people identify the emotion a target person is expressing in the first stage, and make attributions about the person's disposition based on the person's behavior, situational cues, and their own prior knowledge about the person in the second stage. Similarly, with the Social Perception of Emotions in Context (SPEC) model, Hareli and Hess (2012) proposed people make attributions based on their knowledge of a person and their own goals, motivations, affective states, and abilities. In both of these models, people may have little preexisting knowledge of the person

they are evaluating, and as a result they may be susceptible to perceiving behavior caused by the situation as evidence of a person's disposition. These models also demonstrate, however, that if perceivers are presented with information about the situation, their attributions could change once this new information is incorporated. Thus, directing perceivers to situational factors could lead perceivers to make different attributions than they would have otherwise made.

Indeed, researchers have demonstrated that perceivers can be encouraged to make situational attributions through experimental manipulation. For instance, Krull and Dill (1996) asked perceivers either situational or dispositional questions about a target character's emotion and found they could shift the inferential focus of the perceivers based on which type of questions were asked first. People asked situational questions were more likely to first draw situational attributions about a target character and to take a longer amount of time to generate dispositional attributions about the character. Similarly, Stewart, Latu, Kawakami, and Myers (2010) trained participants to make situational attributions, by describing the differences between dispositional and situational attributions and instructing participants to complete training trials where they were required to make situational attributions upon seeing images of Black faces. In a later study, the authors found this attribution training led to a decrease in the trained participants' associations between images of Black target people and implicit negative stereotypes about Black people. Studies such as these provide evidence that people can be encouraged to make situation-driven rather than disposition-driven attributions. However, these studies require explicit instruction to encourage people to emphasize situational factors in their attribution process. Though these methods are promising, they may not be the most ecologically valid way of changing attributions. Perhaps more ecologically valid for switching perceivers' attribution frame may be a statement provided directly by the target person being evaluated.

Using an intervention we term *Acknowledging Contextualized Emotion* (ACE), people can change how their emotion displays are perceived. ACE is a proactive strategy people can use to explicitly acknowledge their emotion and its relation to the situation. By providing a short verbal statement either during or shortly after an emotion display, people expressing emotion can direct perceivers to the situational cause of their emotions. In previous work, we found that ACE was effective with college students who rated the competence of characters in vignettes who either: exhibited no emotion, exhibited emotion, but said nothing about it, or exhibited emotion and used ACE. Specifically, characters who displayed anxiety or sadness and used ACE were rated as equally competent as characters who showed no emotion, and as more competent than characters who said nothing about their displayed emotion (Zawadzki, Shields, & McCormick, in prep.). Additionally, in another study, ACE was effective for displays of anxiousness in a videotaped doctor-patient diagnosis situation (Zawadzki, Shields, & Haidet, in prep.). Thus, using ACE allows people to provide perceivers with justifiable reasons for their emotion displays, and buffer how their competence is perceived.

Because people using the ACE intervention proactively direct perceivers to the situational causes of their emotions, perceivers may be more likely to incorporate this information in the attribution process. Our previous work with ACE found no evidence of many possible alternative explanations for ACE's effectiveness, including: perceived emotion control, perceived appropriateness of the emotional intensity, the importance of the situation, likeability, or perceived emotional intelligence. Thus, our findings indicate ACE is likely effective because by using the intervention, perceivers are led to take contextual information into account when making attributions.

Perceptions of Women's Emotion

The ACE intervention may be most useful for members of certain social groups whose emotions are likely to be judged as stemming from their traits rather than from the situation. There is evidence that outgroup members are perceived as having less complex emotions than ingroup members (e.g., are described to be experiencing sadness as opposed to sympathy) (Leyens et al., 2000). Ingroup members also have a tendency to describe the attitudes of outgroup members as being held due to emotionality, rather than rationality (Kenworthy & Miller, 2002). Findings such as these suggest that stereotypes inform judgments of others' emotions.

For women in particular, there is evidence that perceivers are likely to attribute women's emotional displays to emotional natures, due to stereotypes about women as excessively emotional. For instance, when women and men are in identical situations, men are judged to be reacting emotionally due to the situation, while women are judged to be emotional due to the situation and due to having an emotional disposition (Brescoll & Uhlemann, 2008; Shields, Steinke, & Koster, 1995; Shields & Crowley, 1996). Additionally, work has shown women's emotion is often viewed as less legitimate than men's emotion (Timmers, Fischer, & Manstead, 2003; Warner, 2007), suggesting the need for interventions for women especially, to buffer perceptions of competence when expressing emotions.

Although the above findings suggested women's emotion is perceived differently than men's, our previously mentioned vignette study found no differences in ratings of competence for male and female characters displaying emotion (Zawadzki, Shields, & McCormick, in prep.). It may be then, that in particular contexts perceivers make harsher judgments about women's competence than in others. STEM fields, where rationality and logical thinking are emphasized

and women are underrepresented, may present a context in which women's emotions will be judged more harshly than in other contexts.

Perceptions of Women in STEM

For women, displaying emotion in the science fields, which emphasize rationality, may lead to negative judgments of their competence. The stereotype that emotionality is associated with women and rationality is associated with men (e.g., Shields & MacDowell, 1987; Fischer, 1993; Meadows, 2004; Shields, 2007) reflects a lay belief that women have emotional dispositions. This stereotype may also inform people's perceptions about who is suitable for STEM fields. Because people view emotions as interfering with, and antithetical to, reason, displaying emotion could lead to the judgment that people displaying emotion are emotional and less competent than those not displaying emotion. Indeed, Nobel Laureate and biochemist, Tim Hunt's highly publicized comments from June 2015 echo this sentiment: "...my trouble with girls...three things happen when they are in the lab...You fall in love with them, they fall in love with you and when you criticise them, they cry" (Ratcliffe, 2015).

Many possible explanations have been put forth to explain women's underrepresentation in STEM. Many have argued that disparity is likely due to sociocultural factors preventing women's equal advancement in these fields (e.g., Ceci et al., 2009). Others have suggested biased perceptions play an important role, such as the perception that women are stereotypically not suitable for STEM fields (Cheryan & Plaut, 2010), or the perception that men and women scientists conduct science differently due to gender differences (Sonnert & Holton, 1996). Other explanations include, for example, stereotype threat, or the confirming of negative performance stereotypes (e.g., Spencer, Steele & Quinn, 1999), women's views of STEM fields as incompatible with their values and expectations of career success (e.g., Eccles, 1987; Wang,

Eccles, & Kenny, 2013), and a lack of female role models in these fields (e.g., Marx & Roman, 2002). Perhaps a contributor to women's underrepresentation in these fields is the judgment that women displaying typical emotion caused by or intensified by the situation have too emotional a personality to excel in STEM. Although empirical work suggests women are negatively stereotyped as excessively emotional, the impact of this stereotype on women's underrepresentation in STEM fields has so far to my knowledge not been examined.

Being stereotyped as emotional may lead to the judgment that women are less competent than men in fields requiring rationality. In STEM fields, biased judgments of women's competence lead to decreased odds for women of being hired, less mentoring, and smaller starting salaries (Moss-Racusin, Dovidio, Brescoll, Graham, & Handelsman, 2012). Women in STEM may be viewed as less competent than men in part due to this cultural belief that women have emotional personalities. Study 1 tested the hypothesis that women in STEM may be viewed as incompetent due in part to the stereotype that women are excessively emotional.

Using ACE to Change Perceptions of Women's' Emotion in STEM

In two studies, men and women undergraduates watched a video of a woman interviewing for a lab manager position who either: expressed no nervousness, expressed nervousness without commenting on it, or expressed nervousness and used the ACE intervention. In Study 1, participants saw a woman display one of these three emotion displays in either a STEM or non-STEM field. Both studies tested whether a candidate who used ACE was rated as more competent than a candidate who ignored her own emotion. Study 1 tested if women who ignored their emotion in STEM fields would be seen as less competent than women in non-STEM fields who ignored their emotion. In Study 2, participants evaluated women job candidates displaying one of the three emotion displays, and they were informed that their evaluation was a test of

accuracy, such that they could be either right or wrong in their evaluation of whether or not the candidate was hired. Hypotheses were as follows:

Hypothesis 1.

Women in STEM field interviews who display emotion without commenting on it will be judged as less competent than women who display emotion without commenting on it in non-STEM field interviews.

Hypothesis 2.

Across fields, women who use the ACE intervention will be rated as more competent than women who display emotion without commenting on it.

STUDY 1

Study 1 tested how competent job candidates were perceived to be in a job interview when either displaying no nervousness, displaying nervousness without commenting on it, or displaying nervousness and using ACE, in either a STEM or non-STEM field interview.

Method

Design.

The study was a 2 (field: STEM vs. non-STEM) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) between-subjects randomized design on ratings of competence and likelihood of being hired.

Participants.

An a priori power analysis was conducted in G*Power and revealed 158 people were needed in the sample to detect a moderate effect size ($f=.25$). Undergraduate students were recruited through Penn State's SONA system and received .5 course credits for their half hour of participation. Both men and women undergraduates were recruited as participants, because stereotypes have been shown to affect those in the stereotyped group as well as those in the majority group (e.g., Simon & Hamilton, 1994). Six participants were excluded from the sample because they completed the survey in less than 4 minutes, and 1 participant's duplicate response was deleted. Thus, the final sample was made up of 153 undergraduates (79 women, 74 men; aged 18-30, $M=19.36$, $SD=1.62$). The race/ethnicity of the sample was as follows: 76.5% White/Caucasian, 9.8% Asian, 4.6% Latina/o or Hispanic, 3.9% Black or African American, 2.0% Southeast Asian, 2.0% Multiracial, 1.3% Other. STEM majors comprised 28.1% of the sample, indicating a major in the College of Sciences, Engineering, Information and Technology, Agricultural Sciences, Medicine, or undertaking a major in mathematics (71.2% non-STEM or health field, 0.7% information missing). When asked if interested in applying for a lab manager

or graduate student position in the future, 33.3% expressed interest, 33.3% indicated they were not interested, and 33.3% marked they were not yet sure of their interest in these positions. Very few participants reported having experience working as a research assistant (9.8%), and the majority of the sample indicated they had not had such experience (90.2%).

Materials.

Videos.

Participants viewed a video of a college-age woman interviewing for a lab manager position in a STEM (chemical engineering) or non-STEM (sociology) field. The video was filmed so participants only saw the interviewee, in front of (using a green screen) either a backdrop in a laboratory with scientific equipment or a backdrop with a desk and bookshelves, to signal the job field. Interview questions appeared on the screen, with the question text in focus and the interviewee blurred in the background. Questions then faded out and the interviewee came into focus when answering the question (video paradigm based on Zawadzki, 2012; see Figure 1 for video example). Interview questions were based on common interview questions gathered through online searches (see Appendix A for video transcripts).

Two different actors were used to ensure consistency. Actors were recruited from the Penn State Theater Department. Actors auditioned with a script read-through, including acting out anxious displays where appropriate. Three actors were given the script for about a week to rehearse. Filming took approximately an hour and actors were compensated \$40 each. A video of each of the three actors (in the STEM, no emotion condition) was piloted with undergraduates (N=36) to ensure the two actors selected were no different in likeability, competence, attractiveness, and dispositional emotionality. Two of the actors (both White, college-aged

women) showed no significant differences across any of these dimensions and these two were therefore used for the study.



Figure 1. Example of Video Interview.

Depending upon emotion condition, participants saw a woman in an interview either: show the physical symptoms of nervousness without commenting on her nervousness, show nervousness and use ACE, or show no nervousness. Expressions of nervousness included stammering, hesitations, hand wringing, indirect eye contact and other verbal and nonverbal communicators of being nervous. In the ACE conditions, statements were deployed at two time points, once at the start and once toward the close of the interview. The ACE statements were as follows: *“I know I seem nervous right now, but I am really interested in the position.”* and *“I know I may have seemed nervous during the interview, but I really want this job.”*

Videos were about 3 minutes in length and were identical except for the exclusion of the ACE statement in the ignore emotion conditions or nervousness and the ACE statement in the no emotion conditions (see Figure 2 for timing of nervousness by scene and condition; percentage of emotion and ACE displays based on Zawadzki, 2012).

Table 1

Timing of Emotion Displays by Condition and Scene.

	Question/Scene Number													
Emotion Display Condition	1	2	3	4	5	6	7	8	9	10	11	12	13	14
No Emotion	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Ignore Emotion	Red	Yellow	Red	Yellow	Red	Yellow	Yellow	Yellow	Red	Yellow	Yellow	Red	Yellow	Yellow
ACE	Purple	Yellow	Red	Yellow	Red	Yellow	Yellow	Yellow	Red	Yellow	Yellow	Purple	Yellow	Yellow

Note: The numbers on the top row indicate the interview question/scene number. Yellow indicates when no emotion was present. Red indicates when nervousness was displayed. Purple indicates when ACE was used, in addition to a nervousness display.

Measures.***Perceived nervousness.***

Participants rated how nervous, anxious, and calm (reverse-coded) candidates were, and these items were combined to create a scale of perceived nervousness (Cronbach's $\alpha = .91$).

Competence.

Competence items were taken from a seven-item scale previously used to assess competence in the ACE vignette study (Cronbach's $\alpha = .85$). This scale was broken down into the competence and likelihood of being hired scales (an additional item added to the latter). Participants rated competence by rating candidates on five items, including items such as: "How much do you think the job candidate will be able to do what needs to get done to succeed?" and "How organized was the job candidate as he or she spoke?" (Cronbach's $\alpha = .88$).

Likelihood of being hired.

Three items assessed competence more specifically in terms of perceived likelihood that the candidate would be hired. Items included: "How likely do you think it is that the job candidate will get the job?", "How do you think the interview went?" and "How much of a good fit do you think the candidate is with the job?" (Cronbach's $\alpha = .90$).

Dispositional emotionality.

Dispositional emotionality was measured by three items: “In general, how emotional is the job candidate?”, “In general, how much do you think the job candidate has control over his or her emotions?” (reverse-coded), and “In general, how likely is the job candidate to overreact?” (Cronbach’s $\alpha = .68$).

Excuse-making.

Though only relevant to the ACE conditions, all participants also rated how justified the candidate’s statements were perceived to be. Items to assess excuse-making included: “How much did the job candidate make excuses for his or her performance in the interview?” and ‘How defensive was the job candidate about his or her performance in the interview?’ ($r_s = 0.36, p < .001$).

Likeability.

Although our past work with ACE showed likeability likely does not explain ACE’s effectiveness, participants also rated candidates on likeability. Because the videos depict one-on-one interactions in interview settings where likeability may have a strong impact on judgments, it was important to once again rule out that ACE’s effectiveness for buffering competence could be driven by increased liking. Four items used previously in the vignette study were used to assess likeability (Cronbach’s $\alpha = .87$). Items included: “How likeable is the job candidate?” and “How much would you want to spend time with the job candidate?” Items formed a scale at a similar level of reliability as found previously (Cronbach’s $\alpha = .88$).

Procedure.

Participants were told the purpose of the study was to investigate how people perceive others in job interview settings. Participants were assigned to watch a video either labeled as of a

job candidate for a chemical engineering or for a sociology lab manager position. After viewing the interview video, participants rated the interviewee on nervousness, competence, likelihood of being hired, dispositional emotionality, excuse-making, and likeability. All items were presented to participants in a randomized order. All ratings were on a 1 (*Not at All* or *Not Very Well* or *Strongly Disagree*) to 7 (*Very Much* or *Very Well* or *Strongly Agree*) scale. (Items listed in Appendix B; measures and reliability of scales detailed above.) Participants' scores on each scale were averaged for analysis. Finally, participants answered the open-ended question, "Please briefly describe your overall impressions of the job candidate", and filled out demographic information, including pertinent information such as their undergraduate major, if they had experience working as a research assistant, and if they were interested in applying for a lab manager or graduate student position in the future.

Results

Preliminary analyses.

To examine if there was an effect of actor, 2 (actor: actor 1 vs. actor 2) X 2 (field: STEM vs. non-STEM) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) between-subjects ANOVAs on each of the dependent variables of interest: nervousness, competence, likelihood of being hired, dispositional emotionality, excuse-making, and likeability, were conducted. There was no main effect or interaction of actor on any of the dependent variables, so the two actors were collapsed for subsequent analyses.

To ensure job candidates in the ignore and ACE conditions were perceived to be more nervous than candidates in the no emotion conditions, a 2 (field: STEM vs. non-STEM) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on perceived nervousness. Results revealed a main effect of emotion display on perceived nervousness,

$F(2,147)=86.44, p<.001, \eta_p^2=.54$. Pairwise comparisons revealed job candidates in the ignore conditions ($M= 4.72, SD=1.21$) were rated as more nervous than candidates in the no emotion conditions ($M=2.57, SD=1.11$) ($p<. 001$), and candidates in the ACE conditions ($M=5.50, SD=1.12$) were rated as more nervous than candidates in the no emotion conditions ($p<. 001$). Pairwise comparisons also revealed candidates in the ACE conditions were seen as more nervous than candidates in the ignore conditions ($p=. 001$). There was no main effect of field ($p=0.33$), and no effect of the interaction of emotion display and field ($p=0.99$) on perceived nervousness.

Correlations between measured variables.

Correlations were run between each of the dependent variables of interest (nervousness, competence, likelihood of being hired, dispositional emotionality, excuse-making, and likeability) and one another, within each of the three emotion display conditions. In the no emotion conditions, each of the scales was significantly correlated with one another, with the exception of excuse-making with competence, with likelihood of being hired, and with likeability (see Table 2). Especially high correlations were between perceived nervousness and dispositional emotionality ($r=0.66$), competence and likelihood of being hired ($r=0.66$), and likelihood of being hired with likeability ($r=0.77$). A high correlation between competence and likelihood of being hired was expected, and all scales were analyzed separately due to likely representing conceptually different judgments or outcomes.

Table 2

Correlations Between All Measured Variables in Study 1 No Emotion Conditions

	Nervous	Competent	Hire	Emotional	Excuses	Likeability
Nervous	--	-.54**	-.29*	.66**	.40**	-.43*
Competent		--	.66**	-.51**	-.19	.57**
Hire			--	-.44**	-.23	.77**
Emotional				--	.58**	-.42**
Excuses					--	-.24
Likeability						--

Note. * $p < .05$; ** $p < .01$. Nervous indicates perceived nervousness of the candidate, competent indicates perceived competence of the candidate, hire indicates perceived likelihood of the candidate being hired, emotional indicates perceived dispositional emotionality of the candidate, excuses indicates perceived excuse-making of the candidate, and likeability indicates perceived likeability of the candidate.

In the ignore conditions, each of the scales was significantly correlated with one another, with the exception of excuse-making with perceived nervousness and with dispositional emotionality (see Table 3). Especially highly correlated were competence with likelihood of being hired ($r=0.87$), likelihood of being hired with likeability ($r=0.84$), and competence with likeability ($r=.78$). Although competence and likelihood of being hired are certainly separate constructs, this high correlation indicates in contexts such as job interviews, competence and likeability may rise and fall together.

Table 3

Correlations Between All Measured Variables in Study 1 Ignore Conditions

	Nervous	Competent	Hire	Emotional	Excuses	Likeability
Nervous	--	-.54**	-.60**	.51**	.11	-.58**
Competent		--	.87**	-.47**	-.34*	.78**
Hire			--	-.47**	-.34*	.84**
Emotional				--	.25	-.41**
Excuses					--	-.30*
Likeability						--

Note. * $p < .05$; ** $p < .01$. Nervous indicates perceived nervousness of the candidate, competent indicates perceived competence of the candidate, hire indicates perceived likelihood of the candidate being hired, emotional indicates perceived dispositional emotionality of the candidate, excuses indicates perceived excuse-making of the candidate, and likeability indicates perceived likeability of the candidate.

In the ACE conditions, each of the scales was significantly correlated with one another (see Table 4). Especially highly correlated were competence with likelihood of being hired ($r=0.83$), likelihood of being hired with likeability ($r=0.68$), and competence with likeability ($r=.64$). See Table 5 for means and standard deviations of all dependent measures.

Table 4

Correlations Between All Measured Variables in Study 1 ACE Conditions

	Nervous	Competent	Hire	Emotional	Excuses	Likeability
Nervous	--	-.29*	-.48**	.49**	.39**	-.46**
Competent		--	.83**	-.54**	-.53**	.64**
Hire			--	-.48**	-.56**	.68**
Emotional				--	.58**	-.49**
Excuses					--	-.53**
Likeability						--

Note. * $p < .05$; ** $p < .01$. Nervous indicates perceived nervousness of the candidate, competent indicates perceived competence of the candidate, hire indicates perceived likelihood of the candidate being hired, emotional indicates perceived dispositional emotionality of the candidate, excuses indicates perceived excuse-making of the candidate, and likeability indicates perceived likeability of the candidate.

Competence.

A 2 (field: STEM vs. non-STEM) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on perceived competence. Results revealed a main effect of emotion display, $F(2,147)=29.12, p<.001, \eta_p^2 =.28$. Pairwise comparisons revealed candidates in the no emotion conditions were seen as more competent than candidates in the ignore conditions ($p<.001$) and candidates in the ACE conditions ($p<.001$). Job candidates in the ACE conditions and ignore conditions were not rated as different on competence from one another ($p=0.81$). No main effect of field ($p=0.01$) or interaction between emotion display and field ($p=.46$) were found on competence.

Likelihood of being hired.

A 2 (field: STEM vs. non-STEM) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on likelihood of being hired, and revealed a main effect of

emotion display, $F(2,147)=29.57$, $p<.001$, $\eta_p^2 =.29$. Pairwise comparisons revealed job candidates in the no emotion conditions were seen as both more likely to be hired than candidates in the ignore conditions ($p<.001$), and the ACE conditions ($p<.001$). Candidates in the ignore and ACE conditions were not rated differently ($p=0.43$). No main effect of field ($p=0.18$) or interaction between field and emotion display ($p=0.17$) was found.

Supplementary analyses.

Dispositional emotionality.

A 2 (field: STEM vs. non-STEM) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on dispositional emotionality, revealing a main effect of emotion display, $F(2,147)=26.27$, $p<.001$, $\eta_p^2 =.26$. Pairwise comparisons revealed job candidates in the no emotion conditions were seen as lower in dispositional emotionality than candidates in the ignore conditions ($p<.001$) and candidates in the ACE conditions ($p<.001$). Candidates in the ignore conditions were seen as lower in dispositional emotionality than candidates in the ACE conditions as well ($p=0.01$). No main effect of field ($p=0.14$) or interaction between emotion display and field ($p=0.82$) was found.

Excuse-making.

A 2 (field: STEM vs. non-STEM) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on excuse-making, and revealed a main effect of emotion display, $F(2,147)=21.42$, $p<.001$, $\eta_p^2 =.23$. Pairwise comparisons revealed job candidates in the ACE conditions were seen as higher in excuse-making than candidates in the no emotion conditions ($p<.001$) and candidates in the ignore conditions ($p<.001$). Candidates in the ignore and no emotion conditions were not seen differently in excuse-making ($p=0.28$). No main effect of field ($p=0.89$) or interaction ($p=0.77$) was found.

Likeability.

A 2 (field: STEM vs. non-STEM) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on likeability, yielding a main effect of emotion display, $F(2,147)=28.01, p<.001, \eta_p^2=.28$ Pairwise comparisons revealed job candidates in the no emotion conditions were rated as more likeable than candidates in the ignore conditions ($p<.001$) and candidates in the ACE conditions ($p<.001$). Candidates in the ignore and ACE conditions did not differ in likeability ($p=0.12$). No main effect of field ($p=0.18$) or interaction ($p=0.21$) was found.

Table 5

Study 1 Means (Standard Deviations) of Competence and Other Ratings by Display

	Study 1				
	Competence	Hire	Emotionality	Excuse-making	Likeability
No Emotion	6.07 (0.66) ^a	5.93 (0.81) ^a	2.86 (1.08) ^a	2.26 (1.06) ^a	5.49 (1.05) ^a
Ignore	4.90 (1.09) ^b	4.56 (1.29) ^b	3.75 (0.87) ^b	2.54 (1.15) ^a	4.19 (1.26) ^b
ACE	4.86 (0.92) ^b	4.38 (1.17) ^b	4.28 (1.00) ^c	3.85 (1.59) ^b	3.83 (1.19) ^b

Note: Different subscripts indicate the conditions significantly differed from one another on the variable of interest (by at least $p < .05$). Competence indicates perceived competence of the candidate, hire indicates perceived likelihood of the candidate being hired, emotionality indicates perceived dispositional emotionality of the candidate, excuse-making indicates perceived excuse-making of the candidate, and likeability indicates perceived likeability of the candidate.

Study 1 Discussion

Study 1 revealed no effect of field for any of the dependent variables of interest. Thus, Hypothesis 1 was not supported. Emotion displays appear to be viewed similarly in this type of STEM and non-STEM interview setting. Further, Hypothesis 2 was not supported as, contrary to prediction, characters who used ACE were found to be less competent than characters who displayed no emotion, and equally competent as characters who displayed emotion without

commenting on it. Thus, ACE was ineffective in this situation at buffering perceptions of competence of those displaying emotion, compared to those displaying no emotion. Since ACE has been found effective in two previous investigations, yet was ineffective in this context, the question arose of when and why ACE is effective. Perhaps, one factor missing in this interview situation, but present in the previous doctor-patient situation, is that in the latter situation, the doctor could get the diagnosis wrong if he or she did not pay attention to the appropriate symptom set. In that instance, the ACE statement may have served to help the doctor eliminate a possible misdiagnosis. To create a similar situation with the present videos, Study 2 was designed to emphasize the importance of accuracy in participants' judgments regarding whether or not the candidate was hired. The same procedure as Study 1 was used with one major change in the instructions: participants were informed candidates' interviews were either successful or unsuccessful, and that in the study they would indicate if they thought the candidate they watched was ultimately hired. Also, since field was not significant in Study 1, it was dropped as a factor of interest in Study 2.

STUDY 2

Method

Design.

The study was a one-way (emotion display: ACE vs. ignore emotion vs. no emotion) between-subjects randomized design on ratings of competence and likelihood of being hired. Because actor differences were found in preliminary analyses, all planned ANOVAs were run as 2 (actor: actor 1 vs. actor 2) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) between-subjects ANOVAs.

Participants.

An a priori power analysis conducted in G*Power revealed 158 participants were needed to detect a moderate effect size ($f=0.25$). Undergraduate students were once again recruited through Penn State's SONA system and received .5 course credits for their half hour of participation. Six participants were excluded from the sample due to completing the survey in less than 4 minutes, and 1 was excluded due to reporting they could not access the video. Thus, the final sample was made up of 153 undergraduates (77 women, 76 men; aged 18-35, $M=19.21$, $SD=1.96$). The race/ethnicity of the sample was as follows: 75.2% White or Caucasian, 7.2% Asian, 4.6% Multiracial, 3.9% Black or African American, 3.3% Latina/o or Hispanic, 3.3% Middle Eastern or Arab, 1.3% Southeast Asian, 0.7% Native American or Alaskan Native, 0.7% Other. STEM majors comprised 32.7% of the sample, reporting either belonging to the College of Sciences, Engineering, Information and Technology, Agricultural Sciences, Medicine, or undertaking a major in mathematics (67.3% non-STEM field or health field). When asked if interested in applying for a lab manager or graduate student position in the future, 24.8% expressed interest, 46.4% indicated they were not interested, and 28.8% marked they were not

yet sure of their interest in these positions. Very few participants reported having experience working as a research assistant (6.5%), and the majority of the sample indicated they had not had such experience (93.5%).

Materials.

Videos.

The same videos used in Study 1 (described above) were used in Study 2.

Measures.

The same measures as those used in Study 1 (described above) were used in Study 2. Scales of interest were found to be similarly reliable as in Study 1: nervousness (Cronbach's $\alpha = .92$), competence (Cronbach's $\alpha = .85$), likelihood of being hired (Cronbach's $\alpha = .89$), dispositional emotionality (Cronbach's $\alpha = .69$), excuse-making ($r_s = 0.46, p < .001$), and likeability (Cronbach's $\alpha = .85$). Open-ended questions included: "Did the job candidate do anything in the interview that was effective? Please describe.", "Did the job candidate do anything in the interview that undermined his or her performance? Please describe.", and "Please briefly describe your overall impressions of the job candidate."

Procedure.

Participants in this study were informed the purpose of the study was to determine how accurate people are at determining whether or not job candidates were hired for a job, based on their interview performance. Participants were told they would be randomly assigned a video of a candidate, and that some of the candidates' interviews were successful and some unsuccessful. Participants were told they would watch a brief video interview, indicate whether or not they thought the job candidate was hired, and then answer a few further questions about him or her.

Participants were assigned to watch a video labeled as of a job candidate for a chemical engineering lab manager position, who either displayed no nervousness, displayed nervousness without commenting on it, or displayed nervousness and used ACE. After viewing the interview video, participants indicated whether or not they thought the job candidate was hired. They then completed open-ended questions describing if the candidate did anything that was effective during the interview, and describing if the candidate did anything in the interview that undermined his or her performance. Next, participants rated the interviewee on the same items used in Study 1 to measure nervousness, competence, likelihood of being hired, dispositional emotionality, excuse-making, and likeability. All items were presented to participants in a randomized order. All ratings were on a 1 (*Not at All* or *Not Very Well* or *Strongly Disagree*) to 7 (*Very Much* or *Very Well* or *Strongly Agree*) scale. (Items listed in Appendix B; measures and reliability for scales detailed above.) As before, participants' scores on each scale were averaged for analysis. Participants concluded by answering an open-ended question, "Please briefly describe your overall impressions of the job candidate.", and by filling out demographic information, including pertinent information such as their undergraduate major, if they had experience working as a research assistant, and if they were interested in applying for a lab manager or graduate student position in the future.

Results

Preliminary analyses.

To examine when there was an effect of actor, 2 (actor: actor 1 vs. actor 2) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) between-subjects ANOVAs were conducted on each of the dependent variables of interest: nervousness, competence, likelihood of being hired, dispositional emotionality, excuse-making, and likeability. A significant main effect of actor was

revealed for dispositional emotionality and a significant interaction between actor and emotion display emerged for excuse-making. No main effects on the other variables or other interactions between emotion display and actor emerged. Due to the main effect and interaction that did emerge, actor was included as a factor in subsequent analyses.

To ensure job candidates in the ignore and ACE conditions were perceived to be more nervous than candidates in the no emotion conditions a 2 (actor: actor 1 vs. actor 2) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on perceived nervousness. Results revealed a main effect of emotion display on perceived nervousness, $F(2,147)=78.57, p<.001, \eta_p^2=.52$. Pairwise comparisons revealed candidates in the ignore conditions ($M= 4.69, SD=1.28$) were rated as significantly more nervous than candidates in the no emotion conditions ($M=2.63, SD=1.22$) ($p=0.001$). Pairwise comparisons also revealed candidates in the ACE conditions ($M=5.47, SD=0.99$) were rated as more nervous than candidates in the no emotion conditions ($p<.001$). Additionally, pairwise comparisons revealed candidates in the ACE conditions were rated as more nervous than candidates in the ignore conditions ($p=0.001$). There was no main effect of actor ($p=0.94$) or interaction of emotion display and actor ($p=0.50$).

Correlations between measured variables.

Correlations were run between each of the dependent variables of interest (nervousness, competence, likelihood of being hired, dispositional emotionality, excuse-making, and likeability) and one another, within each of the three emotion display conditions. In the no emotion conditions, as in Study 1, each of the scales was significantly correlated with one another, with the exception of excuse-making with competence, with likelihood of being hired, and with likeability (see Table 6). Especially highly correlated were perceived nervousness with

dispositional emotionality ($r=0.71$), competence with likelihood of being hired ($r=0.79$), likelihood of being hired with likeability ($r=0.74$) and competence with likeability ($r=0.72$). As before, each scale was analyzed separately due to likely representing conceptually different judgments or outcomes.

Table 6

Correlations Between All Measured Variables in Study 2 (No Emotion Conditions)

	Nervous	Competent	Hire	Emotional	Excuses	Likeability
Nervous	--	-.58**	-.48**	.71**	.45**	-.51**
Competent		--	.79**	-.56**	-.24	.72**
Hire			--	-.36**	-.03	.74**
Emotional				--	.56**	-.42**
Excuses					--	-.22
Likeability						--

Note. * $p < .05$; ** $p < .01$. Nervous indicates perceived nervousness of the candidate, competent indicates perceived competence of the candidate, hire indicates perceived likelihood of the candidate being hired, emotional indicates perceived dispositional emotionality of the candidate, excuses indicates perceived excuse-making of the candidate, and likeability indicates perceived likeability of the candidate.

In the ignore conditions, each of the scales was significantly correlated with one another, with the exception of excuse-making with perceived nervousness and with likeability (see Table 7). Especially highly correlated were competence with likelihood of being hired ($r=0.87$), likelihood of being hired with likeability ($r=0.81$), competence with likeability ($r=0.71$), and perceived nervousness with dispositional emotionality ($r=0.67$).

Table 7

Correlations Between All Measured Variables in Study 2 (Ignore Conditions)

	Nervous	Competent	Hire	Emotional	Excuses	Likeability
Nervous	--	-.42**	-.50**	.67**	.13	-.34*
Competent		--	.84**	-.36**	-.29*	.73**
Hire			--	-.50**	-.30*	.81**
Emotional				--	.46**	-.43**
Excuses					--	-.24
Likeability						--

Note. * $p < .05$; ** $p < .01$. Nervous indicates perceived nervousness of the candidate, competent indicates perceived competence of the candidate, hire indicates perceived likelihood of the candidate being hired, emotional indicates perceived dispositional emotionality of the candidate, excuses indicates perceived excuse-making of the candidate, and likeability indicates perceived likeability of the candidate.

In the ACE conditions, as in Study 1, each of the scales was significantly correlated with one another (see Table 8). Especially highly correlated were competence with likelihood of being hired ($r=0.83$), likelihood of being hired with likeability ($r=0.68$), and competence with likeability ($r=.64$). Table 9 lists means and standard deviations for all dependent measures.

Table 8

Correlations Between All Measured Variables in Study 2 (ACE Conditions)

	Nervous	Competent	Hire	Emotional	Excuses	Likeability
Nervous	--	-.29*	-.48**	.49**	.39**	-.46**
Competent		--	.83**	-.54**	-.53**	.64**
Hire			--	-.48**	-.56**	.68**
Emotional				--	.58**	-.49**
Excuses					--	-.53**
Likeability						--

Note. * $p < .05$; ** $p < .01$. Nervous indicates perceived nervousness of the candidate, competent indicates perceived competence of the candidate, hire indicates perceived likelihood of the candidate being hired, emotional indicates perceived dispositional emotionality of the candidate, excuses indicates perceived excuse-making of the candidate, and likeability indicates perceived likeability of the candidate.

Competence.

A 2 (actor: actor 1 vs. actor 2) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on competence. Results revealed a main effect of emotion display, $F(2,147)=23.30$, $p<.001$, $\eta_p^2 =.24$. Pairwise comparisons revealed job candidates in the no emotion conditions were seen as more competent than candidates in the ignore conditions ($p<.001$) and candidates in the ACE conditions ($p<.001$). Candidates in the ACE conditions did not differ from candidates in the ignore conditions, ($p=0.68$). No main effect of actor ($p=0.12$) and no interaction ($p=0.40$) was found.

Likelihood of being hired.

A 2 (actor: actor 1 vs. actor 2) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on likelihood of being hired, and revealed a main effect of emotion display, $F(2,147)=15.16$, $p<.001$, $\eta_p^2 =.17$. Pairwise comparisons revealed job

candidates in the no emotion conditions were seen as more likely to be hired than candidates in both the ignore conditions ($p < .001$), and the ACE conditions ($p < .001$). Candidates in the ignore and ACE conditions were not rated differently from one another ($p = 0.96$). No main effect of actor ($p = 0.10$) or interaction between actor and display ($p = 0.80$) was found.

Supplemental analyses.

Dispositional emotionality.

A 2 (actor: actor 1 vs. actor 2) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on perceived dispositional emotionality, revealing a main effect of emotion display, $F(2,147) = 24.39$, $p < .001$, $\eta_p^2 = .25$, and a main effect of actor, $F(2,147) = 6.30$, $p = .01$, $\eta_p^2 = .04$. For main effect of emotion display, pairwise comparisons revealed candidates in the no emotion conditions were seen as lower in dispositional emotionality than candidates in the ignore conditions ($p < .001$) and in the ACE conditions ($p < .001$). Candidates in the ignore conditions were seen as lower in dispositional emotionality than candidates in the ACE conditions as well ($p = 0.04$). For main effect of actor, pairwise comparisons revealed Actor 1 ($M = 3.96$, $SD = 1.15$) was seen as higher in dispositional emotionality than Actor 2 ($M = 3.58$, $SD = 0.98$) ($p = 0.01$). No interaction between emotion display and actor ($p = 0.85$) was found.

Excuse-making.

A 2 (actor: actor 1 vs. actor 2) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on excuse-making, and revealed a main effect of emotion display, $F(2,147) = 25.19$, $p < .001$, $\eta_p^2 = .26$. Pairwise comparisons revealed job candidates in the ACE conditions were seen as higher in excuse-making than candidates in the no emotion conditions ($p < .001$) and candidates in the ignore conditions ($p < .001$). Candidates in the no

emotion and ignore conditions were not rated differently from one another ($p=0.09$). A significant interaction between emotion display and actor also emerged, $F(2,147)=3.09$, $p=.05$, $\eta_p^2=.40$. Simple effects tests revealed in the ignore conditions, actor 1 ($M=3.15$, $SD=1.02$) was seen as higher in excuse-making than actor 2 ($M=2.35$, $SD=1.18$), $F(1,147)=4.93$, $p=0.03$, $\eta_p^2=.03$. No main effect of actor ($p=0.28$) was found.

Likeability.

A 2 (actor: actor 1 vs. actor 2) X 3 (emotion display: ACE vs. ignore emotion vs. no emotion) ANOVA was conducted on likeability, and revealed a main effect of emotion display, $F(2,147)=14.30$, $p<.001$, $\eta_p^2=.16$. Pairwise comparisons revealed job candidates in the no emotion conditions were rated as more likeable than candidates in the ignore conditions ($p<.001$) and candidates in the ACE conditions ($p<.001$). Candidates in the ignore and ACE conditions were not rated differently from each other in likeability ($p=0.82$). No main effect of actor ($p=0.21$) or interaction ($p=0.98$) was found.

Table 9

Study 2 Means (Standard Deviations) of Competence and Other Ratings by Display

	Study 2				
	Competence	Hire	Emotionality	Excuse-making	Likeability
No Emotion	5.99 (0.74) ^a	5.53 (1.12) ^a	3.05 (.095) ^a	2.32 (1.34) ^a	5.11 (1.18) ^a
Ignore	4.93 (1.07) ^b	4.43 (1.30) ^b	3.94 (1.07) ^b	2.75 (1.17) ^a	4.08 (1.20) ^b
ACE	4.85 (0.98) ^b	4.44 (1.05) ^b	4.32 (0.86) ^c	4.04 (1.36) ^b	4.03 (1.03) ^b

Note: Different subscripts indicate the conditions significantly differed from one another on the variable of interest (by at least $p < .05$). Competence indicates perceived competence of the candidate, hire indicates perceived likelihood of the candidate being hired, emotionality indicates perceived dispositional emotionality of the candidate, excuse-making indicates perceived excuse-making of the candidate, and likeability indicates perceived likeability of the candidate.

Undermining factors.

Of the 52 participants in the ACE conditions, 26 (50%) freely responded the candidate either stating she was nervous or the candidate appearing nervous undermined her performance. Of those in the ACE conditions who mentioned the candidate's nervousness, 16 of those 26 participants (30.8% overall of participants in the ACE condition) specifically responded that commenting on her nervousness undermined the candidate's performance in the interview. Within the ACE conditions, 24 participants (46.2%) mentioned signs of physical nervousness (without mentioning nervousness specifically) as undermining performance, and two participants (3.8%) made no mention of nervousness, the ACE statement, or physical movements as undermining. In the ignore conditions, 17 participants (33.3%) mentioned the candidate's nervousness or discomfort as undermining, 25 participants (49%) mentioned physical signs of nervousness (without connecting them explicitly to nervousness), and nine participants (17.6%) mentioned nothing related to nervousness as undermining. In the no emotion condition, one participant (2.0%) mentioned the candidate appearing nervous as undermining, two participants (4.0%) mentioned physical movements associated with nervousness (without connecting them to nervousness), and 47 participants (94.0%) did not mention anything associated with nervousness as undermining.

Study 2 Discussion

In Study 2, even when participants believed they could either be accurate or inaccurate in their evaluation of whether or not a candidate was hired, results replicated those found in Study 1. As in Study 1, job candidates who used ACE were rated as less likely to be hired and less competent than candidates who displayed no nervousness. Additionally, in Study 2 as well as in Study 1, candidates who used ACE were rated as higher in dispositional emotionality and

perceived nervousness than those who displayed nervousness without commenting on it. Yet, despite being rated higher in emotionality, candidates in both studies who used ACE were rated no differently than candidates who displayed nervousness without comment on competence, likelihood of being hired, and likeability. Thus, it is possible ACE somewhat buffered perceptions of the competence of those displaying emotion, just not to the extent that was predicted. Open-ended responses provided some insight that using the ACE statement, seeming nervous, and expressing nervous and/or distracting nonverbal behaviors may have led to harsher overall judgments of the candidate in the interview context.

GENERAL DISCUSSION

In the present studies, the effectiveness of an intervention, Acknowledging Contextualized Emotion (ACE), was tested in interview settings in STEM and non-STEM fields. Overall, results of Studies 1 and 2 found ACE did not effectively buffer perceptions of competence for job candidates expressing nervousness and using the intervention. In both studies, candidates who used ACE were rated as less competent and less likely to be hired than candidates who displayed no nervousness. Compared to candidates who displayed nervousness without comment though, candidates who used ACE were rated as higher in dispositional emotionality and perceived nervousness yet were rated no differently on competence, likelihood of being hired, and likeability. Thus, ACE did not benefit the candidate in terms of perceived competence or likeability as predicted, but ACE did not cost the candidate either. In addition, results of Study 1 yielded no difference in how competent a woman job candidate was perceived based on the type of field she was interviewing for a job in.

Study 1 provided no evidence of women's nervousness being perceived differently in an interview for a lab manager position in a STEM field than in a non-STEM field. One possible explanation for this lack of effect is that perhaps, for undergraduate participants, lab manager positions in chemical engineering and sociology are not viewed as different from one another. Perhaps contrasting a STEM position with a position in a more dissimilar context would result in women's emotions being judged more harshly in the STEM context. Another possible reason no difference was found may be the context of a job interview that was chosen for the study. Job interviews may have strict sanctions against acknowledging one's nervousness, regardless of the academic field one is interviewing for. Further, it remains possible stereotypes about women's overly emotional natures are in fact operating more strongly in STEM fields than in other fields,

but maybe not in the interview context. For instance, perhaps in more ambiguous contexts, such as in everyday conversation with coworkers, supervisors, and subordinates, women in STEM displaying emotion are judged more harshly for their emotion displays than women in other fields of work are. In situations such as interviewing for a job or giving a presentation, all people regardless of their gender or work field may face scrutiny for displaying emotion in these situations. In contexts with more ambiguous norms about emotion though, ACE may in fact be needed and effective for women in STEM fields. Much about the role of emotion stereotypes in STEM fields remains to be examined.

Across both studies, contrary to predictions, using ACE in an interview situation did not effectively buffer perceptions of the competence of candidates expressing emotion. In fact, even when participants believed they could be accurate or inaccurate in evaluating whether or not the candidate was hired, the candidates who used ACE were rated as lower in competence than the candidates who did not display nervousness. Further elucidating how participants' perceived those using ACE, supplementary analyses revealed negative effects of ACE on ratings of perceived nervousness, dispositional emotionality, and excuse-making.

In both studies, participants rated job candidates' nervousness to serve as a manipulation check that candidates in the ignore and ACE conditions were seen as higher in perceived nervousness than candidates in the no emotion conditions. Unlike in our previous work with ACE (Zawadzki, Shields, & McCormick, in prep.), across studies participants not only rated job candidates in the ACE and ignore conditions as more nervous than candidates in the no emotion conditions, they also rated candidates in the ACE conditions as more nervous than candidates in the ignore conditions. Perhaps in the interview context, norms about the importance of not being nervous led making a statement that one was nervous to be seen as signaling one is especially

nervous. Rather than placing one's nervousness in context, perhaps, in this setting, using ACE only further drew attention to one's nervousness.

Similarly, in both studies, candidates who used ACE were seen as higher in dispositional emotionality than both candidates expressing no nervousness and candidates expressing nervousness without using the intervention. It appears that the ACE statement, rather than drawing perceivers' attention to the situation as it has effectively done in past work, may have signaled candidates were especially emotional and led to them being perceived as even higher in dispositional emotionality than those who displayed nervousness without comment. Perhaps, norms about how people should behave in interviews led a statement of one's nervousness in this setting to backfire, conveying only someone with an overly emotional personality would comment upon her nervousness in this context.

Additionally, across studies, candidates in the ACE conditions were seen as higher in excuse-making than candidates in the no emotion and ignore conditions (though it does not make as much sense to compare across conditions on this variable, as candidates in the no emotion and ignore conditions did not make a statement that could be seen as an excuse). Open-ended responses however about what the candidate did in the interview that undermined his or her performance, revealed around 31% of the participants in the ACE condition freely responded the statement itself was undermining. These responses indicate some people in fact saw the ACE statement itself as harming the candidate's performance. Perhaps the statements were viewed as unreasonable for the situation or perceived as not matching the level of emotion the person was experiencing, resulting in the statements being perceived negatively as excuse-making.

Studies conducted on apologies and justifications may provide some insight into how the ACE statement is operating. Although the statement is not an apology per se, it may be operating

similarly. Numerous studies on apologies have found perceived sincerity is an important element of an effective apology (e.g., Basford, Offermann, & Behrend, 2014; Cugueró-Escofet, Fortin, & Canela, 2014; Schumann, 2012; Shnabel, Halabi, & SimanTov-Nachlieli, 2015). People perceived to be sincere in their apologies are perceived to have greater humility (Basford, Offermann, & Behrend, 2014), while those perceived to be insincere are less likely to be forgiven (Shnabel, Halabi, & SimanTov-Nachlieli, 2015). Indeed, providing a dishonest explanation has been found to be worse than providing no explanation at all (Shapiro, 1991). Perceived sincerity may be related to excuse-making, as those perceived to be making excuses may also be perceived to be insincere in their emotion or intent. Further, those using ACE and providing a reason others find unreasonable may be seen as insincere or as trying to make an excuse for their behavior. Just as being perceived as insincere makes apologies ineffective, being seen as making excuses may explain a circumstance under which ACE is ineffective.

Effective apologies are also related to increases in likeability for the apologizer (e.g., Frantz & Bennis, 2005; Gordon, 1996; Stearns & Parrott, 2012). In domains somewhat related to competence, apologies can help lessen blame (Crant & Bateman, 1993) and lead supervisors to have more confidence that subordinates will not make the same mistakes again (Wood & Mitchell, 1981). Although the candidates using ACE were viewed as higher in excuse-making and dispositional emotionality than candidates in the no emotion and ignore conditions, candidates in the ACE conditions were viewed as similarly likeable, competent, and likely to be hired as those who ignored their emotion. Thus, candidates using ACE did not experience harsher judgments on these dimensions than candidates who ignored their emotion, though candidates using ACE were perceived as experiencing more emotion and making more excuses. Future work could investigate if ACE and apologies result in equivalent perceptions of

competence, likeability, and other dimensions, and could investigate to what degree these statements are effective and ineffective in particular contexts.

Additional factors affect the effectiveness of apologies, which may also align with factors predicting the effectiveness of ACE. For instance, late apologies can be more effective than early apologies due to receivers of the apology feeling more understood and heard by the time they are apologized to (Frantz and Bennis, 2005). Perhaps, the timing of the ACE statement is also important to its effectiveness. With one statement in the present studies being delivered right at the start of the interview, it is possible the candidate's statement was perceived as insincere or inappropriate. Future work could investigate if the timing of the statement plays a role in how sincere someone deploying the statement is perceived to be.

Limitations and Future Directions

In the present studies, ACE was ineffective for those displaying nervousness in a video-taped interview for a lab manager position in both a STEM and non-STEM field. These findings run counter to previous studies where ACE has been shown to be effective in vignettes describing characters experiencing nervousness: in an interview for a volunteer position, practicing a speech with a friend, and meeting with a doctor, and experiencing sadness: when meeting with a college instructor and thinking of friends far away. ACE was also effective in a video medium where standardized medical patients used ACE and were diagnosed by medical students as correctly having coronary heart disease, rather than being overly emotional. ACE being ineffective in Study 1 raised the question of when and why ACE is and is not effective. One possibility was that in the doctor-patient scenario the doctor had something to lose if he or she misdiagnosed the patient. Thus, in Study 2 the element of possibly being accurate or inaccurate in one's evaluation was introduced. Even with this added feature though, ACE

remained ineffective compared to the no emotion condition in the video interview situation (though a limitation of the manipulation was participants were not asked for instance, how confident they were in their judgment that the candidate was hired or not).

A further possibility is in the doctor-patient scenario, the deployment of the ACE intervention signals to the doctor he or she can exclude a possible diagnosis. Further, the stakes of misdiagnosing the patient may still be higher in the case of the doctor and patient than the interviewer and interviewee. In fact, in the interview situation the interviewer who excluded someone they perceived as nervous and overly emotional may think they are making the safer decision. In the present studies, candidates used ACE to explain an emotion, nervousness, which was directly caused by the situation they were in. Perhaps, admitting nervousness in an interview situation signals one is unprepared, unqualified, or being dishonest about the job or his or her qualifications. Alternatively, perhaps ACE would be effective if the stakes were raised for the interviewer such that they were interviewing the top applicant out of one hundred, as opposed to interviewing one of fifty, equally qualified applicants.

Although similar in the type of situation and the type of emotion displayed, the present studies' video format may also cause ACE to operate differently than the vignettes described previously. Rather than taking on the role of evaluator, reading the vignettes may cause participants to take on the perspective of the character being described, or to evaluate the scenario as a third-party observer. Watching the video as if one is the interviewer may result in ACE being perceived differently. However, when one uses ACE in situations where there are less strict proscriptions against expressing emotion, such as in an interpersonal work context rather than in an interview, perhaps ACE could be effective regardless of format.

Additionally, unlike in the doctor-patient situation where medical students were diagnosing actors trained especially for medical students to practice diagnosing, the present studies recruited undergraduates as the interviewers. It is likely this population has little experience conducting interviews and hiring others in the workplace.

Future questions remain about the conditions under which ACE is and is not effective. For instance, future work should look at the distinctions between, and effects of, acknowledging contextualized emotion using different types of statements. People may use statements that could be considered ACE statements spontaneously. As discussed above, ACE may share some similarities with apologies and justifications, but may also operate differently.

A limitation of the proposed study is that this controlled test of ACE only looks at the use of the intervention in a momentary instance. Future work should address what happens when ACE is used at multiple time points, in multiple situations, by the same person. In the case of apologies for instance, Bolino, Klotz, and Daniels (2014) looked at the effect of using apologies and justifications, which they termed defensive impression management strategies, over time. The authors had service workers and their supervisors each fill out questionnaires within two weeks of the subordinate starting his or her job, and eight weeks later. They found the relationships between defensive impression management strategies and supervisor ratings of likeability and performance were stronger during the first two weeks than they were eight weeks later. Perhaps unlike apologies, ACE is effective over time, or perhaps it suffers from repeated use as apologies do.

Further, the present studies only examined the effectiveness of ACE for White women in interview settings. Intersectionality, or the mutually constituted, relational nature of identity, cautions us we cannot conclude the intervention is effective or ineffective for women without

asking for *which women*. The present studies used two, college-aged White women in the investigation. Piloting revealed a Black woman actor was rated differently on a handful of the competence dimensions, pointing to possible intersecting gender and race stereotypes experienced by Black women in these types of situations. When, why, and for whom, the ACE intervention is and is not effective remain important future directions.

Conclusion

Emotions occur in everyday situations and convey important information to others. Yet, perceivers often misinterpret emotion displays as evidence of stable personality traits, rather than reactions to particular situations. In past work, the ACE intervention has been shown to be effective at buffering perceptions of competence when displaying emotion. Results of the present studies did not find a difference for how candidates expressing emotion were perceived based on the job field they were interviewing in. Further, both Study 1 and Study 2 revealed perceivers viewed those expressing nervousness as lacking competence, and ACE was unable to fully buffer the competence of those expressing emotion in this particular situation and format. It remains important we further investigate when and under what conditions ACE is and is not effective.

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Appendix A

Video Transcripts

ACE conditions.

1. How are you today? ******(anxious display and ACE statement)

I'm doing well, thanks. I know seem a bit nervous, but I'm really interested in this position.

2. Why are you applying for a lab manager position?

I applying to be a lab manager because I am planning to apply to graduate school, and I am hoping to gain more in-depth experience conducting research.

3. Do you have any past experience working in a lab? ******(anxious display)

Yes, as an undergraduate I worked as a research assistant for Dr. Smith for two years. I learned a lot about the research process in my time there.

4. How do you think that experience enhanced your qualifications to work as a lab manager?

In Dr. Smith's lab I was involved in purchasing materials, writing grants, helping to design studies, entering data, and running some studies. The experience sparked my interest in becoming more involved in research as a lab manager and later a graduate student.

5. What career do you see yourself in five years from now? ******(anxious display)

I hope to be in graduate school in a couple of years and then after that I hope to continue with a career in research.

6. Why do you want to work here in particular?

Dr. Johnson's lab is a good fit with my interests and the work you are conducting is interesting to me. I would like to become involved in the lab's existing projects, contribute to new projects, and oversee and take on tasks to help the lab function efficiently.

7. Do you have any other relevant past work experiences?

Yes, outside of working as a research assistant, I worked as an administrative assistant in the advising office for a work-study job last year, and there I developed useful organizational and time management skills.

8. Do you have any experience mentoring others?

No, not yet. But I'm looking forward to getting that kind of experience.

9. Do you have any leadership experience? ******(anxious display)

Yes, I was in charge of organizing a charity event for my student organization and learned to coordinate many people's schedules and lead a team.

10. How would you describe your ideal work environment?

I would describe my ideal work environment as one that is collaborative yet has a lot of room for independent work.

11. What would you say is your strength?

I'm hard-working, organized, and good at working with others.

12. Is there anything else you would like me to know? ******(anxious display and ACE statement)

I know I may have seemed nervous during the interview, but I really want this job.

13. Would you be interested in working over the summer as well?

Yes, absolutely.

14. Do you have references we can call?

I do, yes. They are listed on the bottom of my resume. All of them have agreed to be contacted by phone or email if you'd like to know more about my work.

Ignore conditions.

1. How are you today? ******(anxious display)

I'm doing well, thanks.

12. Is there anything else you would like me to know? ******(anxious display)

I really want this job.

2-11 and 13-14: Same as above.

No emotion conditions.

1. How are you today? ******(NO anxious display and NO ACE statement)

I'm doing well, thanks.

3. Do you have any past experience working in a lab? ******(NO anxious display)

Yes, as an undergraduate I worked as a research assistant for Dr. Smith for two years. I learned a lot about the research process in my time there.

9. Do you have any leadership experience? ******(NO anxious display)

Yes, I was in charge of organizing a charity event for my student organization and learned to coordinate many people's schedules and lead a team.

12. Is there anything else you would like me to know? ******(NO anxious display and NO ACE statement)

I really want this job.

2, 4, 6-8, 10, 11, 13, and 14: Same as above

Appendix B

Rating Scales

#1-3: perceived nervousness

#4-6: perceived likelihood of being hired

#7-11: perceived competence

#12-14: perceived dispositional emotionality

#15-16: perceived excuse-making

#17-20: perceived likeability

Please rate the character in the video on a scale of 1-7 by selecting a number below for each of the following statements:

1. How anxious was the job candidate?

1.....2.....3.....4.....5.....6.....7
Not anxious at all Very anxious

2. How calm was the job candidate? (R)

1.....2.....3.....4.....5.....6.....7
Not calm at all Very calm

3. How nervous was the job candidate?

1.....2.....3.....4.....5.....6.....7
Not nervous at all Very nervous

4. How do you think the interview went?

1.....2.....3.....4.....5.....6.....7
 Not well at all Very well

5. How much of a good fit do you think the job candidate is with the job?

1.....2.....3.....4.....5.....6.....7
 Not much at all Very much

6. How likely do you think it is that the job candidate will get the job?

1.....2.....3.....4.....5.....6.....7
 Not at all likely Very likely

7. How clearly did the job candidate speak?

1.....2.....3.....4.....5.....6.....7
 Not clearly Very clearly

8. How rationally did the job candidate act?

1.....2.....3.....4.....5.....6.....7
 Not rationally at all Very rationally

9. How much do you think the job candidate will be able to do what needs to get done to succeed?

1.....2.....3.....4.....5.....6.....7
 Not at all Very much

10. How well organized was the job candidate as he or she spoke?

1.....2.....3.....4.....5.....6.....7
Not organized at all Very organized

11. How positively did the job candidate present his or herself to the interviewer?

1.....2.....3.....4.....5.....6.....7
Not positively at all Very positively

12. In general, how emotional is the job candidate?

1.....2.....3.....4.....5.....6.....7
Not emotional at all Very emotional

13. In general, how much do you think the job candidate has control over his or her emotions? (R)

1.....2.....3.....4.....5.....6.....7
Not much at all Very much

14. In general, how likely is the job candidate to overreact?

1.....2.....3.....4.....5.....6.....7
Not likely at all Very likely

15. How much did the job candidate make excuses for her performance in the interview?

1.....2.....3.....4.....5.....6.....7
Not much at all Very much

16. How defensive was the job candidate about his or her performance in the interview?

1.....2.....3.....4.....5.....6.....7
 Not defensive at all Very defensive

17. How likable is the job candidate?

1.....2.....3.....4.....5.....6.....7
 Not likeable at all Very likeable

18. How much would you want to talk to the job candidate?

1.....2.....3.....4.....5.....6.....7
 Not much at all Very much

19. How much would you want to spend time with the job candidate?

1.....2.....3.....4.....5.....6.....7
 Not much at all Very much

20. How much would you want to act like the job candidate in this situation?

1.....2.....3.....4.....5.....6.....7
 Not much at all Very much