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This paper investigates how expressions of emotion affect persuasiveness when the expresser and the recipient have different levels of power. The first study demonstrates that when the recipient overpowers the expresser, emotional expressions reduce persuasion. A second study reveals that power and perceived appropriateness of emotional expressions independently moderate the effect of emotional expressions. Emotional expressions hamper persuasion when the recipient overpowers the expresser, or when the emotional expressions are considered inappropriate.

Keywords: persuasion; emotion; expression; power; appropriateness

Introduction

Expressers' emotional expressions affect recipients' behavior in various social settings including personal relationships, parent–child interactions, and in arenas of conflict, negotiation, and leadership (Van Kleef, 2009). For instance, customers express greater satisfaction when a service provider is smiling (Barger & Grandey, 2006), and voters show more support for politicians who express anger (Tiedens, 2001). The Emotions as Social Information (EASI) model (Van Kleef, 2009; Van Kleef, De Dreu, & Manstead, 2010) proposes that people extract social information from others' emotional expressions and use this information to guide their decisions.

Studies in varied fields have suggested that the effects of emotional expressions differ from context to context. While some social contexts such as negotiation have received much attention, the interpersonal effects of emotional expressions on persuasion remain poorly understood (Van Kleef, Van den Berg, & Heerdink, 2015). Although there exists a large body of research in the context of persuasion, the main focus has been on the *intrapersonal* effects of emotion (i.e., how one's own emotion affects the way he/she is persuaded; e.g., Petty, Fabrigar, & Wegener, 2003) as well as the impact of emotional framing (e.g., the effect of framing a persuasive message to match the recipient's emotion; e.g., DeSteno, Petty, Rucker, Wegener, & Braverman, 2004). However, far fewer studies have investigated the *interpersonal* effects of emotions in the context of persuasion (i.e., how an expresser's emotional expressions affect persuasion of the recipient).

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Van Kleef et al. (2015) recently conducted a series of experiments on how an expresser's emotional expressions affect recipients' attitude formation and change. These authors reported that individuals use the evaluative information inherent in others' emotional expressions to inform their own attitudes, but only when they are motivated and able to process this information. Emotional expressions resulted in recipients developing attitudes that were congruent with the evaluative information inherent in the emotional expressions. Furthermore, anger expressions, when compared with expressions of happiness, were more effective in changing pre-existing attitudes. For example, when university students faced conflicting opinions with emotional expressions such as "I see only advantages" with a smiley, or "It is ridiculous" with an angry emoticon, anger expressions exerted greater attitude change in the direction of the expresser's position than expressions of happiness, but only to the degree that the recipient was engaged in thorough information processing.

In our studies, we expanded Van Kleef and colleagues' work in several ways. First, we examined the role of power and the perceived appropriateness of the emotional expressions. Based on Van Kleef's EASI model, emotional expressions produce interpersonal effects by triggering affective reactions and/or inferential processes in recipients, depending on the recipient's information processing, and the perceived appropriateness of the emotional expression (Van Kleef, Van Doorn, Heerdink, & Koning, 2011). Therefore, power (a factor affecting how people process information), as well as perceived appropriateness, may moderate the effect of emotional expressions.

A second contribution of this work is to move beyond manipulations of facial expression by tying emotional expressions to a social reward strategy. Along these lines, the Carrot-and-Stick approach is a strategy that aims at influencing people by providing rewards (carrot) and punishment (stick). For example, in social interactions people may try to reward others by smiling and punish by showing anger. We are interested in examining whether these expressions would affect persuasion. In the present studies, we contrasted a persuader that displayed happiness and anger following the Carrot-and-Stick strategy with one that did not express any emotions.

Third, Van Kleef and colleagues used subjective measurement (i.e., self-reported attitude). In our studies a behavioral measure was adopted. We observed how participants changed their solutions to a problem-solving game after receiving persuasive information from a teammate.

In Study 1, we looked at effects when the expresser has low power (e.g., a follower) and the recipient has high power (e.g., a leader). Existing studies on leadership have mainly focused on how leaders' emotional expressions affect follower behavior (e.g., Bono & Ilies, 2006; George, 2000; Lewis, 2000; Sy, Côté, & Saavedra, 2005; Van Kleef, Homan, Beersma, & van Knippenberg, 2010). Very few studies have examined the effect of followers' emotional expressions on leader recipients. Results from this study would provide insights on whether (and how) followers' emotional expressions affect leader behavior in persuasion. We anticipated that followers' emotional expressions are seen as inappropriate by leaders because dominant people are expected to express emotions such as anger (Hess, Adams, & Kleck, 2005; Tiedens, 2001), and they do not like mimetic behavior from subservient individuals (Tiedens & Fragale, 2003). According to Van Kleef et al. (2011), inappropriate and appropriate emotional expressions may have different social consequences. Inappropriate emotional expressions have been found to cause retaliation in negotiation (Van Kleef & Côté, 2007). Therefore, we hypothesized that when a follower attempts to use emotional expressions to persuade a leader, these emotional

Figure 1.   Sample faces used in the study.
Source: ©Jeffrey Cohn (S55), http://www.consortium.ri.cmu.edu/ckagree/.

expressions are seen as inappropriate by the leader and would cause retaliation. This hypothesis was tested in Study 1. We then looked at effects of leaders' emotional expressions on follower behavior in Study 2.

Study 1

The Lunar Survival Task (Hall & Watson, 1970) has been widely used to study persuasion. We simulated the task in a computer program with a virtual teammate. In Study 1, participants played the role of a leader (recipient) as they received persuasive information from a virtual follower (expresser). The computer program randomly assigned one out of three virtual followers (one male and two females) to each participant. Half of the participants (randomly selected) interacted with a follower that did not express any emotions, whereas the other half communicated with one that displayed happy/ angry facial expressions following the Carrot-and-Stick approach. More specifically, an angry facial expression was displayed when the participant's answer was very different from the expert opinion that was espoused by the virtual teammate, and a happy face was shown when the participant's response was close to the expert opinion. The facial animation of the virtual follower was synthesized using images from the Cohn–Kanade Facial Database (Kanade, Cohn, & Tian, 2000; Lucey et al., 2010; see Figure 1 for sample images), as this database provides reliably labeled happy and angry facial images. We hypothesized that when the virtual follower displays emotions, participants would be less persuaded. In other words:

> Hypothesis 1: A follower who expresses emotion is less persuasive than a follower who does not express emotion.

Method

Participants

A total of 555 workers were recruited from Amazon Mechanical Turk to participate in Study 1 for monetary reward. All workers resided in the USA. The sample had an average age of 31.02 (SD = 10.06) with 47.83% females. Caucasians comprised 77.08% of the population, whereas the remainder consisted of Asians (9.09%), African-Americans (8.10%), Hispanic Americans (4.74%), and Native Americans (0.99%). Fourteen responses were removed because these participants may have completed the study without reading the questions (Oppenheimer, Meyvis, & Davidenko, 2009). Six

outliers were excluded from analysis because their scores on the dependent measure were greater than three SDs away from the mean. Eventually, 535 data points remained for analysis.

Procedure and materials

After accepting our invitation to "participate in a problem-solving game with a teammate" on Amazon Mechanical Turk, the participants were directed to the online questionnaire. Participants started by answering basic demographic questions including age, gender, and ethnicity.

Next, each participant was informed that he/she had crash landed on the moon and needed to choose items in order to trek 200 km back to a life-saving rendezvous point. Fifteen items were provided, and the participant was asked to rank the items based on importance in aiding survival. The rankings were recorded as pre-rankings.

After the pre-rankings were recorded, the participant was encouraged to discuss rankings with a teammate who "knows the inventory well," and that "everyone's survival depends on reaching the life-saving rendezvous point." It was stressed that although the participant was second in rank, the captain had been separated due to the crash landing, which effectively made the participant the de facto leader. The participant was told that he/she should decide how to use information from the teammate (follower), and he/she could update rankings at any given time before submitting the final decision.

The participant then saw an image of the follower in neutral expression and a chat box where the participant could send and receive information via text. The virtual follower's verbal behavior (pre-programmed) was exactly the same across conditions; in both conditions, the follower would ask the participants to change their rankings (e.g., "You should rank oxygen 1") unless the item had been ranked correctly. The only difference was whether the follower displayed emotions. Under the non-emotional condition, the follower remained in neutral expression all the time. Under the emotional condition, the follower would display angry/happy facial expressions based on the Carrot-and-Stick approach. For example, assume the participant asked, "What is your ranking for oxygen?" and the follower responded, "I ranked oxygen 1, what is your ranking?" (Here 1 is NASA's expert ranking for oxygen, and the follower's responses always reflect NASA's expert rankings.) If the participant responded with a ranking that is within one rank of NASA's expert ranking (e.g., the participant ranked oxygen 1 or 2), the follower would display a happy face. However, if the participant provided a ranking that is greater than four ranks away from NASA's expert ranking (e.g., the participant ranked oxygen between 5 and 15), the follower would show an angry facial expression. When the above conditions were not met or a new question was asked, the follower would display a neutral facial expression. Participants were unaware that the suggested rankings were NASA's expert rankings.

Each participant was required to ask at least three questions, but there was no upper limit. When the participant finalized the rankings, the computer recorded these as post-rankings. Finally, each participant was asked questions regarding his/her experience including how expressive he/she judged the follower to be, were thanked and given instructions for receiving payment.

Dependent measure

The dependent measure is a numeric score indicating how much change each participant had made after receiving persuasive information. The score is calculated by computing the difference between the pre- and post-rankings. There are a total of 15 items, and each item is assigned a unique number between 1 and 15 as an indication of its ranking (with 1 being the most important item). This turns the pre- and post-rankings into two 15-dimensional vectors. Finally the dependent measure—namely Change Score—is calculated by computing the Euclidean distance between the two vectors. Precisely:

$$\text{Change Score} = \sqrt{\sum_{i=1}^{15} \left(\text{PreRanking}_{item\#i} - \text{PostRanking}_{item\#i} \right)^2}$$

Higher change scores imply more persuasion, whereas lower change scores indicate less persuasion.

Results and discussion

Manipulation check

When asked to rate their teammate based on expressiveness on a scale from 1 to 11 (with 11 being extremely expressive), participants who saw an emotional teammate had a higher rating ($M = 7.32$, $SD = 2.291$) than those who interacted with a non-emotional teammate ($M = 6.18$, $SD = 2.662$), with $t(533) = 5.32$, $p < .001$. Thus, the emotional teammate was perceived as more expressive than the non-emotional teammate.

Effects of emotional expressions

Emotional expressions had an effect on persuasion, $F(1, 533) = 16.29$, $p < .001$, $d = .35$; see Table 1. Leaders who observed facial expressions from an emotional follower were *less* persuaded (Mean Change Score = 9.11, $SD = 6.004$) than those who encountered a non-emotional follower ($M = 11.23$, $SD = 6.059$). This finding supports Hypothesis 1: A follower who expresses emotion is less persuasive than a follower who does not express emotion.[1]

We propose that emotional expressions from a follower were seen as inappropriate by the leader and caused retaliation, as seen in negotiation studies (Van Kleef & Côté, 2007). We conducted a second study to more closely explore this by manipulating the appropriateness of emotional expressions as well as participants' perceived power.

Table 1. Main effect of emotional expressions in Study 1.

Dependent measure = Change Score					
	N	Mean	SD	SE	95% CI for mean
Non-emotional	298	11.23	6.059	.351	(10.54, 11.92)
Emotional	237	9.11	6.004	.390	(8.35, 9.87)
Total	535	10.29	6.121	.265	(9.77, 10.81)

Study 2

Study 1 demonstrated that when a subservient teammate expressed emotions, this reduced persuasion toward a leader. One plausible explanation is that leaders considered the teammate's emotional expressions to be inappropriate and retaliated.

If leaders perceive these emotional expressions to be *appropriate*, would the result be different? Van Kleef et al. (2011) pointed out that the perceived appropriateness of the emotional expression may moderate the effect of emotional expressions. Therefore, if leaders consider the emotional expression to be appropriate, emotional expressions may not reduce persuasion as much as when leaders consider these emotional expressions to be inappropriate.

On the other hand, while leaders may judge followers' emotional expressions to be inappropriate, it is less likely that followers would judge leaders' emotional expressions as inappropriate. Previous studies in negotiation (Van Kleef, De Dreu, Pietroni, & Manstead, 2006) as well as the EASI model have indicated that power is a moderator on the effect of emotional expressions. Therefore, if emotional expressions are targeted at followers, they may not reduce persuasion as much as when they are targeted at leaders.

In Study 2, we hypothesized that the effect of emotional expressions on persuasion is jointly determined by power and perceived appropriateness. The effects of power and perceived appropriateness are additive such that when emotional expressions are targeted at leaders and when considered inappropriate, this reduces persuasion to a greater extent than when: (1) emotional expressions are targeted at *followers* and considered inappropriate; or (2) emotional expressions are targeted at leaders and considered *appropriate*. Study 2 was conducted to test these hypotheses. Three variables were independently manipulated in Study 2: teammate's emotional expressions: emotional vs. non-emotional, participant's power: leader vs. follower, and perceived appropriateness of emotional expressions: appropriate vs. implicitly inappropriate. Two sub-hypotheses were tested:

> Hypothesis 2a: Emotional expressions reduce persuasion more when targeted at leaders and considered inappropriate than when targeted at *followers* and considered inappropriate.

> Hypothesis 2b: Emotional expressions reduce persuasion more when targeted at leaders and considered inappropriate than when targeted at leaders and considered *appropriate.*

Method

Participants

A total of 1200 workers were recruited from Amazon Mechanical Turk. Participants who had participated in Study 1 were disqualified from participating in Study 2. All workers resided in the USA. There were 42.72% females, and the average age was 30.69 with SD = 10.01. Caucasians comprised 78.45% of the sample, whereas the remainder consisted of Asians (8.52%), African-Americans (7.47%), Hispanic Americans (4.98%), and Native Americans (0.58%). Sixty participants were removed because they may have completed the survey without reading the questions (Oppenheimer, Meyvis, & Davidenko, 2009). Eighty-eight participants were excluded because they may have misread (or did not read) the instructions (details are described under the "Manipulation checks" section below). Eight outliers were removed (e.g., their scores of the dependent measure were greater than three SDs away from the mean). A total of 1044 data points were used for analysis.

Procedure and materials

Study 2 used the same computer-simulated persuasion task as Study 1. Emotional expressions were manipulated the same way as in Study 1; in the emotional condition, the virtual teammate displayed angry/happy facial expressions based on the Carrot-and-Stick strategy, and in the non-emotional condition, the teammate did not express any emotions. To manipulate power, participants under the leader condition were instructed that they were the leader, whereas those under the follower condition were told that they were the follower. For the perceived appropriateness of emotion manipulation, we adapted a method that was used in previous research (Adam, Shirako, & Maddux, 2010). Participants in the appropriate condition were given the following information:

> A recent study has found that most people express emotions, including anger, in computer-mediated communication. The study further indicated that it is widely acceptable to express emotions during computer-mediated communication.

In comparison, no such information was given in the implicitly inappropriate condition.[2] Therefore, the implicitly inappropriate condition was identical to that in Study 1, and replicates the "Default anger" condition in Adam and colleagues' experiment (Adam et al., 2010).

The same dependent measure from Study 1 was used, i.e., a numeric change score reflecting the difference between the pre-ranking vector and the post-ranking vector. A higher score indicates more persuasion, whereas a lower score implies less persuasion.

Results and discussion

Manipulation checks

Participants who interacted with an emotional virtual teammate rated their teammate as more expressive ($M = 7.43$, SD $= 2.314$) than those who encountered a non-emotional teammate ($M = 6.15$, SD $= 2.781$; $t(1042) = 8.09$, $p < .001$). All participants were asked who was the leader after receiving assignment, and a chi-square test showed that responses were consistent with assigned role, λ^2 (1, $N = 1044$) $= 965.53$, $p < .001$, such that 98.23% of participants assigned as leaders responded correctly compared to 98.06% of participants who responded that were assigned to be a follower. Participants who had confusion about their role (21 in total) were excluded from data analysis. For participants under the appropriate condition (i.e., they received information that emotional expressions were appropriate), they were asked "Is expressing emotions, including anger, appropriate in computer-mediated communication?" 453 out of 520 (86.92%) participants answered "Appropriate." The rest (67 in total) were removed from data analysis. Thus, in total, 88 responses were excluded.[3]

Main effects

We found a significant main effect of power on persuasion, $F(1, 1042) = 25.66$, $p < .001$, $d = .31$; see Table 2. Followers were persuaded more (Mean Change Score $= 11.10$, SD $= 7.422$) compared to leaders ($M = 8.71$, SD $= 7.805$).

Data analysis on the cells replicating the condition in Study 1 (participants were leaders who did not receive instructions on perceived appropriateness) revealed a main effect of emotional expressions, $F(1, 271) = 7.60$, $p = .006$; an emotional follower achieved less persuasion (Mean Change Score $= 7.402$, SD $= 7.217$) than a non-emotional follower ($M = 9.97$, SD $= 8.16$), see Table 3. Therefore, these cells replicated

Table 2.   Main effect of power in Study 2.

Dependent measure = Change Score					
	N	Mean	SD	SE	95% CI for mean
Participant is leader	505	8.71	7.805	.347	(8.03, 9.39)
Participant is follower	539	11.10	7.422	.320	(10.47, 11.73)
Total	1044	9.94	7.699	.238	(9.48, 10.41)

Table 3.   Main effect of emotional expressions in the cells in Study 2 that replicated the condition in Study 1.

Dependent measure = Change Score					
	N	Mean	SD	SE	95% CI for mean
Non-emotional, Participant is leader, Implicitly inappropriate	129	9.97	8.163	.719	(8.55, 11.39)
Emotional, Participant is leader, Implicitly inappropriate	144	7.40	7.217	.601	(6.21, 8.59)
Total	273	8.61	7.771	.470	(7.69, 9.54)

results from Study 1. On the other hand, the main effect of emotional expressions was absent on all the cells in Study 2 (where half of the participants were leaders, and half were followers), $F(1, 1042) = 1.42$, $p = .233$ (*ns*), indicating that the effect of emotional expressions is moderated by power.

Interaction effects

We performed a $2 \times 2 \times 2$ ANOVA test, but did not find a three-way interaction between emotional expression, power, and perceived appropriateness, $F(1, 1035) = .04$, $p = .838$ (*ns*). Instead, we observed two two-way interactions: power interacted with emotional expression; and appropriateness interacted with emotional expression. These effects suggest that power and perceived appropriateness are two independent moderators on the effect of emotional expressions. Given the a priori hypotheses, cell comparisons were performed in testing Hypotheses 2a and 2b (Rosenthal & Rosnow, 1985). Details are described below.

Power moderated the effect of emotional expressions, $F(1, 1040) = 4.54$, $p = .033$, $d = .13$; see Table 4 and Figure 2. When a follower tried to persuade a leader (Figure 2, left), the leader's behavior differed when the follower expressed emotions vs. did not express emotions, $F(1, 503) = 4.78$, $p = .029$, $d = .19$. Leaders were less persuaded

Table 4.   Interaction between emotional expression and power in Study 2.

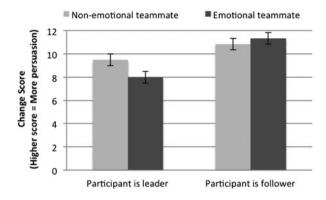| Dependent measure = Change Score					
	N	Mean	SD	SE	95% CI for mean
Non-emotional, Participant is follower	278	10.86	7.323	.456	(9.97, 11.75)
Emotional, Participant is follower	261	11.35	7.531	.470	(10.43, 12.27)
Non-emotional, Participant is leader	241	9.50	7.913	.489	(8.54, 10.46)
Emotional, Participant is leader	264	7.99	7.648	.468	(7.07, 8.91)

Figure 2.   Two-way interaction between emotional expression and power.

when their follower displayed emotions (Mean Change Score = 7.99, SD = 7.648) than when the follower did not display emotions (*M* = 9.50, SD = 7.913). However, when a leader tried to persuade a follower (Figure 2, right), there was no such effect. In summary, emotional expressions reduced persuasion only when expressed by a follower.

The perceived appropriateness also moderated the effect of emotional expressions, $F(1, 1040) = 4.71$, $p = .030$, $d = .14$; see Table 5 and Figure 3. When considered inappropriate (Figure 3, left), emotional expressions showed an effect, $F(1, 1040) = 5.60$, $p = .018$, $d = .14$. On the contrary, when perceived as appropriate (Figure 3, right), this effect was absent. When considered inappropriate, emotional expressions hampered persuasion; an emotional teammate achieved less persuasion (Mean Change Score = 8.97, SD = 7.660) than a non-emotional teammate (*M* = 10.52, SD = 7.579). In sum, emotional expressions reduced persuasion only when perceived inappropriate.

We compared the cell where emotional expressions were targeted at *leaders* and perceived as inappropriate with the cell where emotional expressions were targeted at *followers* and perceived as inappropriate (Table 6, cells in italic). Results indicated that there was less persuasion in the former (*M* = 7.40, SD = 7.217) than in the latter (*M* = 10.71, SD = 7.788), $F(1, 1036) = 12.95$, $p < .001$, $d = .22$. Therefore, Hypothesis 2a is supported. We further compared the cell in which emotional expressions were targeted at leaders and perceived as *inappropriate* with the cell in which emotional expressions were targeted at leaders and perceived as *appropriate* (Table 6, cells in bold). Although the former had a mean Change Score (*M* = 7.40, SD = 7.217) that was lower than the latter (*M* = 8.69, SD = 8.109), there was no sufficient evidence to suggest that there was less persuasion, $F(1, 1036) = 1.89$, $p = .170$ (*ns*). Hypothesis 2b is not supported.

Table 5.   Interaction between emotional expression and perceived appropriateness in Study 2.

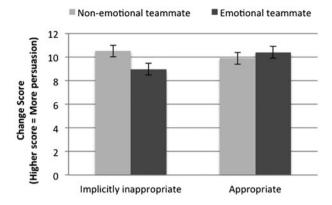| Dependent measure = Change Score					
	N	Mean	SD	SE	95% CI for mean
Non-emotional, Implicitly inappropriate	275	10.52	7.579	.463	(9.61, 11.43)
Emotional, Implicitly inappropriate	274	8.97	7.660	.464	(8.06, 9.88)
Non-emotional, Appropriate	244	9.90	7.680	.492	(8.93, 10.86)
Emotional, Appropriate	251	10.41	7.829	.485	(9.46, 11.36)

Figure 3.   Two-way interaction between emotional expression and perceived appropriateness.

Table 6.   Cell comparisons in Study 2.

Dependent measure = Change Score

	N	Mean	SD	SE	95% CI for mean
Non-emotional, Participant is follower, Implicitly inappropriate	146	11.01	7.014	.628	(9.78, 12.25)
Emotional, Participant is follower, Implicitly inappropriate	*130*	*10.71*	*7.788*	*.666*	*(9.40, 12.02)*
Non-emotional, Participant is follower, Appropriate	132	10.69	7.673	.661	(9.39, 11.99)
Emotional, Participant is follower, Appropriate	131	11.99	7.241	.663	(10.69, 13.29)
Non-emotional, Participant is leader, Implicitly inappropriate	129	9.97	8.163	.669	(8.66, 11.23)
Emotional, Participant is leader, Implicitly inappropriate	**144**	**7.40**	**7.217**	**.633**	**(6.16, 8.64)**
Non-emotional, Participant is leader, Appropriate	112	8.96	7.617	.717	(7.56, 10.37)
Emotional, Participant is leader, Appropriate	**120**	**8.69**	**8.109**	**.693**	**(7.33, 10.05)**

Nevertheless, the above analyses implied that the effects of power and perceived appropriateness are additive. We further conducted a contrast test, and observed that in the cell where emotional expressions were targeted at leaders and perceived as inappropriate, there was less persuasion than in an average of all remaining cells, $t(1036) = 4.23$, $p < .001$, $d = .39$; see Table 6. A second contrast test comparing the same cell with all remaining cells where emotional expressions were targeted at leaders also revealed less persuasion, $t(501) = 2.36$, $p = .019$, $d = .24$; see Table 6.

In summary, Study 2 demonstrated that emotional expressions reduce persuasion when targeted at leaders or when perceived as inappropriate. These two effects are additive; emotional expressions that are targeted at leaders *and* considered inappropriate reduce persuasion to a greater extent than those targeted at followers only *or* perceived as inappropriate only.

General discussion

This paper presents an initial investigation on the effects of emotional expressions on persuasion. Results indicate that emotional expressions reduce persuasion when the

recipient overpowers the expresser, or when the emotional expressions are considered inappropriate.

One major contribution of this work is the introduction of power and perceived appropriateness as two independent moderators. Power moderates the effect of emotional expressions on persuasion; emotional expressions hamper persuasion only when targeted at leaders. On the other hand, perceived appropriateness also moderates the effect of emotional expressions on persuasion; emotional expressions undermine persuasion only when considered inappropriate.

Emotional expressions have been found to backfire in the context of negotiation (Van Kleef & Côté, 2007), however the pattern is somewhat different. In negotiation, recipients retaliate when they are in power *and* they consider anger expressions to be inappropriate. In the current context, recipients retaliate when they are in power *or* they consider the emotional expressions to be inappropriate. This difference may result from the fundamental differences in the nature of the two tasks. In Van Kleef and Côté's studies, there was a conflict of interest, and the task was competitive (to demand more value from the other party); whereas in the present studies, there was no conflict of interest, and the parties' goals were cooperatively linked (i.e., to survive as a team). This distinction can be crucial, as Van Kleef et al. (2010) indicated that the competitive versus cooperative nature of the situation could fundamentally change the meaning and social consequences of emotional expressions. Specifically, strategic inferences may determine behavior when the situation is competitive, and affective reactions can become more predictive of behavior when the situation is cooperative. Therefore, it is likely that in Van Kleef and Côté's negotiation studies, participants engaged in deeper information processing due to higher needs of understanding their opponents' behavior. As a result, they carefully processed all cues, including power *and* appropriateness. When both the power cue and the appropriateness cue were present, they decided to retaliate. In comparison, participants in our studies may have acted in a more automatic way (due to lower needs of interpreting collaborators' behavior). Therefore, as soon as one cue was present (power *or* appropriateness), they retaliated.

Another contribution is the demonstration that leaders are affected by followers' emotional expressions, which is a topic that has not yet received much attention. When followers try to use emotional expressions to persuade leaders, these emotional expressions are seen as inappropriate, and are likely to backfire. Therefore, followers should be careful with expressing emotions when attempting to persuade leaders. However, this is not to say that emotional expressions cannot help. Our studies mainly focused on happiness/anger expressions. Emotions other than anger/happiness may help, e.g., empathetic emotions (Koster, 2006). Furthermore, followers' emotional expressions may help in tasks other than persuasion, such as establishing connections. Future studies need to explore more emotions and contexts.

In our studies, neither followers nor leaders were able to utilize emotional expressions to facilitate persuasion. This calls attention to a few distinctions. First, we contrasted the expression of emotions with no expression, whereas previous studies (e.g., Van Kleef et al., 2015) were mainly concerned with contrasting one emotion with another (e.g., anger vs. happiness). While anger can be more effective in changing attitudes than happiness (Van Kleef et al., 2015), anger and happiness are not necessarily more effective than no emotion (Study 1 and 2). Second, in previous studies, emotions were expressed toward attitudes. For example, in Van Kleef et al. (2015) Study 1, the expresser was sad about abandoning bobsleighing from the Olympics. In Van Kleef et al. (2015) Study 5, the expresser was angry toward the recipient's opinion (e.g., "It's

ridiculous"). In the experiments conducted by Van Kleef & Côté ([2007](#)), the expresser was angry toward the recipient's offer ("This offer makes me really angry"). However, in our studies, emotions were expressed toward the recipient (e.g., "*You* should rank it 1!"). Arguably, "Your *opinion* makes me angry" can be perceived very differently from "*You* make me angry," and may have different social consequences. One future direction is to separately study emotional expressions targeted at an attitude vs. a person.

Study 2 showed that power has a strong main effect on persuasion; people in power resist changing their mind. A similar effect was observed in Van Kleef and colleagues' negotiation study (Van Kleef et al., [2006](#)), where negotiators with high power were less inclined to make concessions. More importantly, in our studies the follower was offering valuable information (NASA's expert opinions), however this information was rejected. This raises the question of how to present valuable information to those in power.

We call for more studies on the topic of emotional expressions in persuasion. Some future directions include: examining other power relationships (e.g., parent–child relationships); exploring more potential moderators (e.g., recipients' epistemic motivation, which is an important metric in an individual's depth of information processing, see Van Kleef et al., [2015](#)); examining culture as a moderator, as Adam et al. ([2010](#)) suggested that people from different cultures may perceive anger expressions differently. Manipulation of appropriateness can be further extended; we compared two levels of appropriateness: appropriate vs. implicitly inappropriate. Adam et al. ([2010](#)) introduced three levels of appropriateness: appropriate instruction, no instruction, and inappropriate instruction. Future experiments can add an explicitly inappropriate condition. Other emotional expressions (e.g., sadness, disgust) can be studied as well.

Our research has several implications in real world applications. First, followers should understand that emotional expressions are not irrelevant during persuasion (Van Kleef et al., [2015](#)), and expressing emotions to a leader may hamper the delivery of valuable information. It may be advisable for followers to hide their emotions during persuasion. If expressing emotions is inevitable, followers may first try to convince the leader that expressing emotions is appropriate.

On the other hand, leaders need to be aware that their information processing is (unconsciously) affected by followers' emotional expressions. Our experiments showed that leaders rejected valuable information when followers appeared emotional. Leaders need to be careful to not let followers' emotional expressions undermine the delivery of important information.

Notes

1. Studies were conducted to separately examine the effects of anger vs. happiness, but the results were inconclusive. When a teammate that only expressed happiness (when rankings were close to NASA's expert rankings) was compared with a non-emotional one, there was no main effect of happiness, $F(1, 97) = 1.94$, $p = .167$ (*ns*). When a teammate that only expressed anger (when rankings were very different to NASA's expert rankings) was contrasted with a non-emotional one, there was no main effect of anger, $F(1, 109) = 1.16$, $p = .285$ (*ns*). This suggests that the effect observed in Study 1 may not be tied to either emotion.
2. A separate study ($N = 50$) suggested that followers' emotional expressions without instructions were judged as inappropriate by leaders ($M = 3.0$ on a scale of 1–7, with 1 being not at all appropriate and 7 being entirely appropriate, SD = 1.68) when compared with leader's emotional expressions as judged by followers ($M = 3.7$, SD = 1.94); $t(49) = 2.35$, $p = .023$. When compared with no emotions, follower's emotional expressions without instructions

were judged as inappropriate by leaders ($M = 3.0$, SD = 1.68) vs. when followers showed no emotions ($M = 3.5$, SD = 1.67; $t(49) = -2.42$, $p = .019$).

3. When participants were told that it is appropriate to express emotions, yet they answered it is *not* appropriate to express emotions, it is possible that they completed the survey without reading the instructions. Responses from these participants may not be valid and were excluded.

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