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I feel our pain: Antecedents and consequences of emotional self-stereotyping

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ABSTRACT

According to Intergroup Emotions Theory people categorized as group members experience the emotions of their ingroup as a consequence of that membership. Four experiments showed that participants converged toward what they believed to be their specific ingroup's distinct emotional experience when reporting emotions as group members, but not when reporting emotions as individuals. Such self-stereotyping of ingroup emotions occurred for an experimentally fabricated ingroup as well as a range of naturally occurring groups. Demonstrating the roots of this process in categorization, self-stereotyping was increased when motivations to affiliate were amplified and was moderated by ingroup identification. The adoption of ingroup emotions changed participants' cognitive processing in a predictable way, demonstrating that emotional self-stereotyping involved the experience rather than merely the expression of group-based emotions. Self-stereotyping of ingroup emotions is thus one mechanism by which group-based emotions are shared and can be changed.

When the crowd sings Calon Lân at a Welsh rugby union match, every Welshman in the stadium feels pride. When college graduates toss their caps in the air at the conclusion of commencement, their common joy is obvious. And as protesters march the streets burning flags and chanting slogans, it is easy to see that they experience frustration, anger, and disgust as one.

The fact that group members in close physical proximity share emotions, as in these examples, is well documented. Such sharing is facilitated by emotional contagion – the tendency to express and feel emotions that are similar to and influenced by those of physically present others (Hatfield, Cacioppo, & Rapson, 1993). Contagion occurs because people spontaneously synchronize facial expressions, vocalizations, postures, and movements with those around them (Bargh & Chartrand, 1999). Since mimicking another's smile, even unknowingly, generates one's own positive affect, and mimicking someone's frown generates negative affect (Strack, Martin, & Stepper, 1988), such processes make it more likely that physically present individuals are all "infected" by the same emotion. Thus, groups of physically present people tend to converge on the same emotion.

But groups of people whose members are not in close proximity may also share emotions. Imagine all of the new college students who wander across campuses and settle into dorm rooms at the beginning of their freshman semester. Despite geographic divides, these students may nevertheless feel very similar emotions when thinking about themselves as college freshmen. Or consider the business traveler, holed up alone in a foreign hotel room. Despite the absence of even a single compatriot, she may nevertheless feel the same surge of pride as she reads about her country's exploits at the summer Olympics that her fellow countrymen thousands of miles away do. Indeed, as anyone accused of being an "ugly American" in a foreign land can attest, even the mere reminder of one's nationality can sometimes evoke a shared pride or fear or guilt.

These examples suggest that the experience of shared emotion by group members may be induced by social and cognitive mechanisms quite independent of those that operate via the presence of others. Intergroup Emotion Theory (IET, Mackie, Maitner, & Smith, 2009; Mackie & Smith, 1998; Smith, 1993) holds that emotional experience depends on social categorization. Social categorization occurs when people think of themselves in terms of their memberships in social groups, rather than their individual or unique characteristics (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner & Oakes, 1989; Turner, Oakes, Haslam, & McGarty, 1994). Contextual clues related to the ingroup can trigger the activation of group membership: Seeing a flag, passing a church, or being a member of an all female committee can activate corresponding national, religious, or gender group identities. Information about relevant outgroups can also activate ingroup memberships: Seeing a foreign monument, passing a synagogue, or being the only woman on a committee can similarly cause people to think of themselves in terms of their ingroup memberships. Whether triggered internally or externally, whether by ingroup or outgroup cues or both, whenever people think about themselves in terms of group mem-

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bership, they are self-categorized. According to IET, such self-categorization triggers socially shared emotions.

Supportive evidence demonstrates that the mere activation of group membership triggers common emotional experiences in isolated group members in the face of group relevant events (Gordijn, Yzerbyt, Wigboldus, & Dumont, 2006; Kessler & Hollbach, 2005; Mackie, Devos, & Smith, 2000; Mackie, Silver, & Smith, 2004). For example, individuals induced to think of themselves as students shared the same angry response to a proposal that student fees be raised (Gordijn et al., 2006). Even more compelling evidence that social categorization produces emotion sharing even in the absence of other group members was provided by Smith, Seger, and Mackie (2007). Physically isolated participants in these studies first reported their individual emotions, such as happiness, fear, and anger, while thinking of themselves as unique individuals. They also reported the group-based emotions they felt when thinking about themselves as members of a specific group. General or chronic emotions were measured, using wordings like "to what extent do you generally feel", rather than emotional responses to any specific objects or events. So, for example, participants were asked to think about themselves as an American, a democrat, or an Indiana University student, and to report how much happiness, fear, and anger they felt. Results revealed both that the profile of emotions participants experienced as individuals were quite different from those they experienced following social categorization, and that the emotions reported following categorization as a member of one group were distinct from the emotions felt following categorization into a different group. Whereas people reported considerable variability and dissimilarity in emotional experiences while thinking about themselves as individuals, thinking about themselves as members of a group led to a more similar emotional experience across members, especially among highly identified group members. Thus self-categorization produced shared emotional experiences among ingroup members that differed from the emotions people experienced as individuals. These shared emotional experiences occurred not only in the absence of physically present fellow group members, but also in the absence of explicitly presented objects and events that might have triggered group relevant emotions.

How might the activation of group membership result in such emotion sharing?

According to social identity and self-categorization theories, a salient group membership leads to self-stereotyping, or adoption of the ingroup's perceived characteristics, attitudes, and behaviors (Hogg & Turner, 1987; Simon & Hamilton, 1994; Spears, Doosje, & Ellemers, 1997; Turner, 1991). For instance, when group membership is made salient by intergroup comparisons, women describe themselves as more relational than their male counterparts in general, rather than in any specific situation (Guimond, Chatard, Martinot, Crisp, & Redersdorff, 2006). Even when people are falsely led to believe that they belong to groups described as either introverted or extraverted, they readily self-stereotype by attributing both negative and positive traits typical of the group to the self (Simon & Hamilton, 1994).

According to IET, similar processes might operate in the emotional domain. Just as perceptions of the self's attributes converge toward those of currently activated group memberships, group members' emotions might also converge toward the perceived emotions of their ingroup as a result of self-stereotyping. Just as self-stereotyping in other domains has been shown to result in genuine internalization and incorporation of group characteristics as part of the self rather than mere superficial claims of these characteristics (Sinclair, Hardin, & Lowery, 2006; Smith & Henry, 1996; Turner et al., 1987), we assume that self-categorization will lead to group members experiencing, rather than just expressing, the emotions they perceive as typical of their group. Moreover, because self-stereotyping has been shown to depend on identification with the group (Pickett, Bonner, & Coleman, 2002; Spears et al., 1997), we assume that the experience of ingroup emotions driven by self-stereotyping will be moderated by chronic levels of ingroup identification and by experimentally induced motivations to belong.

In the experiments reported here we assessed the viability of self-stereotyping as a mechanism underlying categorization-induced reports of shared emotion. If such self-stereotyping processes operate, two factors are expected to influence emotion convergence: Information about a group's typical emotional experience (which we term an emotion stereotype), and factors that influence motivation to self-stereotype. Because IET asserts that specific emotions vary depending on which group membership is activated at the time, convergence in emotions is anticipated to occur only for the relevant group memberships and for distinct emotions rather than global affect. Moreover, because the internalization of group characteristics is parallel to classic self-stereotyping effects, we expect convergence in group members' emotional expressions to reflect genuine changes in emotional experiences.

Experiment 1

Experiment 1 focused on how emotion stereotypes impact convergence in group-based emotions. After asking participants to report their emotions first as individuals and then as Americans, we provided emotion stereotypes by informing group members that other Americans on average felt either low or high levels of one of two emotions. After this feedback, we again assessed participants' emotions as Americans. We hypothesized that compared to their first report of group-based emotions, participants' group-based emotions would converge toward the low or high level of the specific emotion stereotype provided. To gauge the specificity of this process, we presented stereotypes for either anger or fear and then assessed both emotions. We predicted that because negative emotions are specific and distinct, emotion convergence would occur only on the manipulated emotion, and would not generalize to the other emotion, despite its shared negative valence. We thus predicted a three-way interaction among emotion stereotype, stereotype level, and the group-based emotions assessed. Finally we assessed individual emotion again, expecting the information about group emotional experience to have no impact when participants thought about themselves as individuals.

Method

Participants and design

Participants were 87 female undergraduates, all American citizens, participating in exchange for course credit. Participants were randomly assigned to a 2 (Stereotype emotion: anger or fear) $\times$ 2 (Stereotype level: low or high) $\times$ 2 (Measured emotions: anger and fear) mixed-model design with measured emotions as a within-subjects factor.

Procedure

Participants agreed to participate in a survey about emotions. They understood that they might be asked the same questions more than once in the survey to "ensure validity of the responses." Participants initially reported their baseline individual emotions

(following Smith et al., 2007) using 9-point scales anchored by not at all (1) and very much (9). Specifically, participants were asked "When you think of yourself as an individual, to what extent do you feel..." Of particular importance were items assessing anger (angry, annoyed, irritated, mad, $\alpha = .88$) and fear (afraid, fearful, frightened, scared, $\alpha = .92$). Participants also reported their individual happiness (happy, glad, cheerful, pleased, $\alpha = .92$) and individual sadness (sad, depressed, glum, miserable, $\alpha = .90$).

Participants subsequently reported their emotions while thinking of themselves as Americans: "When you think of yourself as an American, to what extent do you feel..." Once again participants completed measures of anger (angry, irritated, $r = .81$ or mad, annoyed, $r = .78$) and fear (afraid, fearful, $r = .89$ or frightened, scared, $r = .81$).[1] Participants also reported group-based sadness (sad, depressed, $r = .84$ or glum, miserable, $r = .87$) and group-based happiness (happy, glad, $r = .83$ or cheerful, pleased, $r = .84$).

Participants believed they were then receiving a 1 min break that actually served to manipulate information about the group emotion stereotype. During the break participants were informed that the data collected from the survey they were completing was of interest to psychologists and sociologists because it revealed how Americans felt. Part of the feedback read "For example, Americans report very low [extremely high] levels of anger [fear]." Thus, the four versions of this feedback provided emotion stereotypes such that Americans' average level of either anger or fear was either low or high. Once the minute elapsed, participants were told they would continue the same questionnaire.

Participants were then asked again to report their emotions as Americans. They once again reported their group-based anger (angry, irritated, mad, annoyed, $\alpha = .95$), fear (afraid, fearful, frightened, scared, $\alpha = .94$), sadness (sad, depressed, glum, miserable, $\alpha = .89$), and happiness (happy, glad, cheerful, pleased, $\alpha = .95$).

Participants then reported their emotions as individuals once again, with items measuring anger (angry, annoyed, irritated, mad, $\alpha = .90$), fear (afraid, fearful, frightened, scared, $\alpha = .92$), happiness (happy, cheerful, glad, pleased, $\alpha = .95$), and sadness (sad, depressed, glum, miserable, $\alpha = .94$), at the individual level. Participants were debriefed and thanked.

Results and discussion

Group-based emotions

To test for convergence toward the stereotype, post-stereotype group-based anger and fear were entered in a 2 (Stereotype emotion) × 2 (Stereotype level) × 2 (Measured emotions) mixed-model ANCOVA, with measured emotions as a within-subjects factor. Following recommended analytic procedures for this type of experimental design (Huck & McLean, 1975; Rausch, Maxwell, & Kelley, 2003), baseline group-based anger and fear served as covariates for analysis of emotions reported after the emotion stereotype was presented. Significant main effects of stereotype level, $F(1, 81) = 9.59$, $p < .01$, and measured emotions, $F(1, 81) = 4.31$, $p < .05$, were qualified by the predicted three-way interaction, $F(1, 81) = 4.92$, $p < .05$, $\eta_p^2 = .06$. The pattern of means, displayed in Fig. 1, was consistent with hypotheses.

Participants who received the anger stereotype reported group-based anger consistent with the level supposedly experienced by Americans. Specifically, participants experienced less group-based anger when they believed the group's typical level of anger was low ($M = 2.58$) than when they believed it was high ($M = 3.35$), $F(1, 81) = 5.88$, $p < .05$. Participants who received the anger stereotype did not show significant differences in reported fear (low $M = 2.65$ and high $M = 3.13$), $F(1, 81) = 2.75$, $p > .10$. As expected, participants' reported group-based anger converged toward the provided anger stereotype, whereas their reported group-based fear was less sensitive to the anger stereotype.

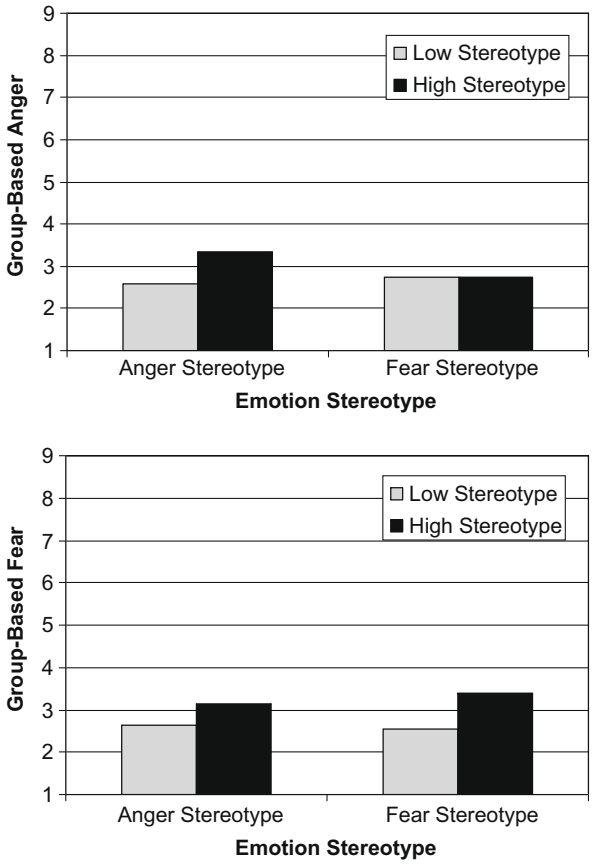

Fig. 1. Estimated marginal means for measured group-based anger (top panel) and measured group-based fear (bottom panel) as a function of stereotype emotion and stereotype level, Experiment 1.

Participants who received the fear stereotype reported group-based fear consistent with the level supposedly experienced by Americans. Specifically, participants experienced less group-based fear when they believed the group's typical level of fear was low ($M = 2.54$) than when they believed it was high ($M = 3.41$), $F(1, 81) = 8.98$, $p < .01$. Participants who received the fear stereotype showed no significant differences in reported anger (low $M = 2.73$ and high $M = 2.73$), $F < 1$, $p > .99$. Once again as expected, participants' reported group-based fear converged toward the provided fear stereotype, whereas their reported group-based anger was less sensitive to the fear stereotype.

Neither the anger nor fear stereotypes had any significant impact on experienced group-based sadness or happiness, all $ps > .13$[2]. Thus, convergence in group-based emotions was only evident for the experienced emotion matching the stereotype emotion. Overall, results were consistent with emotion specificity in group-based emotion convergence.

Individual emotions

[1] Different items were used to assess group-based emotions before participants received the emotion stereotype. This was done to avoid anchoring on baseline reports due to verbal similarity in the measures. Because this factor never qualified any effects for group-based emotions it is not discussed further.

[2] Analyses of group-based sadness and group-based happiness showed no significant effects, whether or not controls for the manipulated group-based emotions of anger and fear were included.

Post-stereotype individual emotion scores were subjected to the same 2 (Stereotype emotion) × 2 (Stereotype level) × 2 (Measured emotions) mixed-model ANCOVA, also controlling for baseline individual anger and fear. No significant effects emerged, all p values > .17. Similarly, no effects emerged for individual sadness or individual happiness, all p values > .16. Thus, there was no evidence of convergence for any individual emotion.

Overall, these results clearly demonstrate convergence in group-based emotions toward a provided emotion stereotype. Participants changed their emotional experiences to match a stereotype indicating that ingroup members felt either low or high levels of either anger or fear. Simply being aware of a group's stereotypic emotional state was sufficient to change group members' emotional experiences.

Results also support emotion specificity in group-based emotion convergence. Emotion stereotypes for group-based anger and fear uniquely changed participants' experiences of anger and fear, respectively. Even between two negatively valenced emotions, like anger and fear, people exclusively changed their experience of the stereotype's target emotion. As further support for emotion specificity, group-based sadness was not influenced by either anger or fear stereotypes (but presumably would be influenced by a sadness stereotype). Thus, emotion stereotypes not only successfully changed people's emotional experiences as group members, but also targeted specific emotions felt as a member of that group.

Importantly, emotional self-stereotyping did not extend to experiences of individual emotions. Even though participants had just been categorized as group members, and even though they just reported converged group-based emotions, participants remained at baseline levels of individual emotions. As expected, group-relevant emotion stereotypes influenced emotions based in group membership, but were irrelevant to experiences of individual emotions.

Although these initial findings demonstrated the impact of emotion stereotypes on group-based emotion convergence and supported an emotion specificity hypothesis, the impact of only a single group membership was examined. Thus, it is possible that the mention of group stereotypes might have prompted convergence in reports of anger related to any group membership. That is, the convergence might have less to do with group membership and more to do with the desire to adopt any socially consensual position. From the IET perspective, however, group-based emotion is also categorization specific: The emotional experience of being a member of one group is distinctly different from the emotional experience of being a member of a different group. In fact, people report distinctly different group-based emotions while thinking about themselves as members of one group than they report when thinking about themselves as members of another (Smith et al., 2007). We assessed the group specificity of stereotype-induced emotion convergence in a second experiment.

It is also possible that the evidence of convergence for group-based emotions and the lack of convergence in individual emotions found in Experiment 1 was contributed to by the order in which these measures were collected. Indeed, measurement of baseline group-based emotions always followed baseline individual emotions and measurement of post-stereotype group-based emotions always preceded post-stereotype individual emotions. In addition to assessing group specificity of emotional self-stereotyping, the second experiment was designed to address this lack of counterbalancing by treating the type of emotional experience as a between-subjects factor. By having participants report only their emotions as group members or only their emotions as individuals, we effectively eliminated any confound introduced by the measurement order in the first experiment.

Experiment 2

We conducted a second experiment both to replicate the convergence of group-based emotions and to investigate whether convergence toward an ingroup's emotion stereotype was specific to categorization in that group, as would be predicted by self-stereotyping, or whether knowledge about a consensually held emotion position might produce convergence toward that position, even if it was not relevant to one's currently activated group membership. Participants reported their emotions either as individuals, as members of their gender ingroup, or as Americans. All participants then received an emotion stereotype stating that Americans experienced either low or high levels of anger. Participants once again reported their emotions as individuals, as members of their gender ingroup, or as Americans. We predicted a two-way interaction between the emotion stereotype provided and the type of emotion reported such that only participants who reported their emotions as Americans would show an impact of the American emotion stereotype. We expected no such evidence of convergence for participants who reported their individual emotions or their emotions as members of their gender ingroup. Thus, group-based emotion convergence would be specific to the target group referenced in the emotion stereotype.

Method

Participants and design

Participants were 124 undergraduate American citizens (41 men and 83 women) participating in exchange for course credit. Participants were randomly assigned to a 3 (Emotion type: individual, American, or gender ingroup) × 2 (Stereotype level: low or high) between-subjects design.

Procedure

Instructions and most aspects of the procedure were identical to Experiment 1 except that participants now only reported one set of emotions prior to receiving the stereotype. Participants completed all emotion measures using 9-point scales anchored by not at all (1) and very much (9). Participants reported their baseline individual emotions, gender ingroup emotions, or American emotions including anger (angry, irritated, mad, α = .85), fear (afraid, fearful, frightened, α = .92), sadness (sad, glum, depressed, α = .89), and happiness (happy, cheerful, glad, α = .87). Participants in the individual condition were asked how they felt as individuals. Men in the gender ingroup condition were asked how they felt as men, whereas women were asked how they felt as women. And participants in the American condition were asked how they felt as Americans.

The stereotype feedback was similar to Experiment 1. All feedback concerned Americans' average level of anger, with no mention of fear. This level was presented as relatively low or high using both verbal and numeric information. Participants read "For example, Americans report an average level of anger of 1.2 [7.2] on the 9-point scale. Knowing that Americans feel very low [extremely high] levels of anger is important to psychologists and sociologists." After 1 min, participants once again reported their emotions as individuals, as Americans, or as members of their gender ingroup including anger (angry, irritated, mad, α = .86), fear (afraid, fearful, frightened, α = .93), sadness (sad, glum, depressed, α = .92), and happiness (happy, cheerful, glad, α = .82). Participants were debriefed and thanked.

Results and discussion

The two independent variables, emotion type and stereotype level, did not interact with participants' self-reported sex, thus we do not discuss this demographic variable further.

As in Experiment 1, participants' post-stereotype anger was subjected to a 3 (Emotion type) × 2 (Stereotype level) ANCOVA with participants' baseline emotions included as a covariate. The predicted two-way interaction emerged, $F(2, 117) = 3.15$, $p < .05$, $\eta_p^2 = .05$, consistent with the expected pattern of means (Fig. 2). The provided emotion stereotype influenced emotions felt as an American such that participants' anger as Americans was lower after receiving the low anger stereotype ($M = 2.29$) than after receiving the high anger stereotype ($M = 2.70$), $F(1, 117) = 7.35$, $p < .01$. In contrast, the provided emotion stereotype had no impact on participants' anger as individuals (low $M = 2.66$ and high $M = 2.55$) or as members of their gender ingroups (low $M = 2.49$ and high $M = 2.55$), both Fs < 1.

The anger stereotype did not have any significant impact on experienced fear, sadness, or happiness, all stereotype level main effects and interactions $p > .44$. Thus, replicating the emotion specificity found in Experiment 1, the emotion stereotype produced convergence in only group-based anger as expected. Once again, these results were consistent with emotion specificity in group-based emotion convergence.

As expected, and consistent with IET, participants' reports of their emotional experience consistently changed toward their ingroup's perceived experience. However, this change was apparent only in group-based emotions and only in emotions experienced as members of the group about which information was provided. An American emotion stereotype uniquely impacted the emotions people felt as Americans and not the emotions they felt as members of their gender ingroup, indicating that social categorization as a member of any one group is insufficient to elicit convergence toward any group stereotype and that the results of Experiment 1 were unlikely to be due to people's adoption of any socially consensual position. These results provide convincing evidence for group specificity. Also consistent with IET and the results of Experiment 1, information about group stereotypes had no effect on emotions people felt when they thought of themselves as individuals. Thus, convergence was isolated to emotions based ingroup membership further demonstrating the distinction between individual level emotions and group-based emotions.

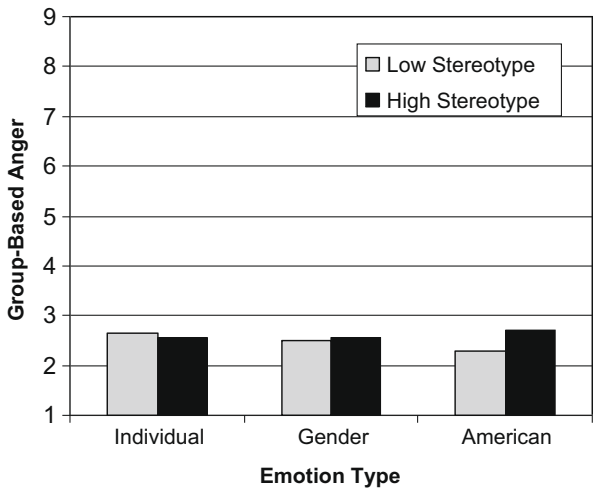

Fig. 2. Estimated marginal means for measured group-based anger as a function of emotion type and stereotype level, Experiment 2.

We have interpreted the findings of Experiments 1 and 2 as evidence that social categorization triggers self-stereotyping of ingroup emotion stereotypes, thus producing shared emotional experiences in groups. If such an interpretation is correct, we would expect these effects to be moderated by factors known to influence self-stereotyping; specifically motivations to balance one's own individual identity with one's group identities (Brewer, 1991). To explore the role of such motivational influences in group-based emotion convergence, we employed an established paradigm using a minimal group that manipulates motivations to self-stereotype (Pickett et al., 2002). Additionally, using a minimal group in this paradigm was also intended to show that membership per se, even in groups previously unknown to participants, was sufficient for self-stereotyping and thus group-based emotion convergence to occur.

Experiment 3

We once again presented group emotion stereotypes, but in addition manipulated group belonging motives, following Optimal Distinctiveness Theory (Brewer, 1991). The theory posits that people have two simultaneous motives: Assimilating into society and differentiating themselves from the masses. Membership in groups satisfies both motives because people can increase their similarity to other group members while differentiating their ingroup from outgroups. Group members can satisfy assimilation needs by taking on the stereotypic attributes of their ingroup, that is, by self-stereotyping. Because the need to assimilate leads to self-stereotyping, factors that increase the need to assimilate also result in increased self-stereotyping. For instance, when people are informed that they are distinct from other group members they engage in more self-stereotyping (Pickett et al., 2002). We adapted this established paradigm to determine whether assimilation needs also motivate people to take on the stereotypic emotions of their ingroup. By presenting participants with identical stereotypic information, but motivating some participants to converge toward the emotion stereotype more than others, we intended to demonstrate that the psychological impact of group membership and its accompanying motivational forces drive group-based emotion convergence.

After being assigned to a minimal group, participants were assigned to one of three emotion stereotype conditions. The first group did not receive any emotion stereotypes for their minimal ingroup, thus their reported emotions as group members represented baseline emotions. The second group received an anger emotion stereotype and a happiness emotion stereotype simultaneously. The third group received these same emotion stereotypes, and also learned that they were personally distinct from other ingroup members. We expected that self-stereotyping would trigger adoption of the group emotion upon mere presentation of emotion stereotypes as in Experiments 1 and 2. However, we also expected that distinctiveness feedback would increase self-stereotyping further.

We provided participants who received emotion stereotypes with an anger stereotype and a happiness stereotype that would be believable, yet that would reflect relatively high levels of anger and happiness. Based on prior experimental work in our lab, we expected that participants would not spontaneously report anger or happiness levels that were as extreme as the anger and happiness stereotypes provided to them. Because both emotion stereotypes exceeded participants' baseline levels of emotions, we hypothesized that systematic increases in both anger and happiness would reflect convergence toward the emotion stereotypes. Thus, we examined mean increases across both anger and happiness as the best test of our convergence hypothesis. Specifically, we expected

all three conditions to be significantly different from each other with the lowest levels of group-based anger and happiness being reported when no stereotypes were presented (since there was no new relevant information about the group's position), and the highest levels of anger and happiness being experienced when the stereotypes were presented and participants were motivated by distinctiveness feedback to demonstrate their similarity to the group.

Method

Participants and design

Participants were 150 undergraduates (56 men and 94 women) participating in exchange for course credit. Participants were randomly assigned to one of three stereotype conditions (no stereotypes, emotion stereotypes, or stereotypes with distinctiveness feedback).

Procedure

Participants were informed that a mass testing session they completed at the beginning of the quarter included very accurate psychological tests that identified them as a member of a group called *incrementalists*. Participants then completed the same Self-Attributes Questionnaire (SAQ; Pelham & Swann, 1989) that other researchers have used to classify people into minimal groups (Pickett et al., 2002). As part of this test participants compared themselves to other college students and reported their relative standing on attributes like intelligence, social skills, and artistic ability.

The manipulation was delivered immediately after participants completed the SAQ. Participants in the no stereotype condition received no information regarding incrementalists and simply moved on to complete the next measure. However, participants in the emotion stereotype condition were given information about incrementalists. Specifically, they were told that the study investigated properties of incrementalists who shared certain characteristics. As an example, participants read that incrementalists had very similar levels of specific emotions. Two scales graphically represented the average levels of happiness and anger experienced by incrementalists. On a 7-point scale anchored by 1 (not at all angry) and 7 (very angry), the number four was circled representing incrementalists' average level of anger. Directly below, a second 7-point scale anchored by 1 (not at all happy) and 7 (very happy) had the number six circled, representing incrementalists' average level of happiness. The values for the anger and happiness stereotypes were chosen to reflect a realistic, believable emotional experience among ingroup members (anger and happiness stereotypes of equal value seemed implausible). Participants in the stereotype with distinctiveness feedback condition were shown the same stereotype information, but were subsequently presented with bogus feedback from the SAQ. Participants in this condition were told that the SAQ assessed their similarity to other incrementalists. Following Pickett et al. (2002), participants were told that incrementalists typically scored around a 62, and that their score on the test was a 48.

All participants then reported how they felt when thinking of themselves as incrementalists on 7-point scales anchored by not at all (1) and very (7). Specifically they were asked "As an incrementalist, to what extent do you feel…" Of particular interest were the three items measuring anger (mad, irritated, and angry, $\alpha = .85$) and the three items measuring happiness (pleased, cheerful, and happy, $\alpha = .83$). Participants were debriefed and thanked.

Results and discussion

A 3 (Stereotype condition) × 2 (Measured emotion: angry and happy) mixed-model ANOVA was performed with measured emotion as a within-subjects factor. A main effect of measured emotion emerged reflecting people's lower group-based anger ($M = 2.91$) than group-based happiness ($M = 5.28$), $F(1, 147) = 318.21$, $p < .001$.

Of greater theoretical interest was the main effect of stereotype condition, $F(2, 147) = 8.00$, $p = .001$, $\eta_p^2 = .10$. All three conditions significantly differed from each other such that participants who did not receive the stereotypes felt less group-based anger and happiness (total $M = 3.83$; anger $M = 2.63$ and happiness $M = 5.03$) than participants who received the stereotypes (total $M = 4.09$; anger $M = 2.87$ and happiness $M = 5.31$), $F(1, 147) = 4.38$, $p < .05$, and participants who received the stereotypes with distinctiveness feedback (total $M = 4.36$; anger $M = 3.21$ and happiness $M = 5.52$), $F(1, 147) = 15.99$, $p < .001$. Thus, consistent with hypotheses, significant convergence toward emotion stereotypes was evident. Additionally, and also consistent with hypotheses, participants who received only the stereotypes felt less group-based anger and happiness than participants who received the stereotypes with distinctiveness feedback, $F(1, 147) = 3.98$, $p < .05$. Although people converged toward the stereotypes when they were presented, convergence was amplified with distinctiveness feedback.

The two-way interaction was not significant, $F < 1$, indicating that emotional self-stereotyping occurred to a similar extent for both the negative emotion of group-based anger and the positive emotion of group-based happiness.[3] Such convergence toward emotion stereotypes, regardless of their valence, suggests that motivations to self-stereotype powerfully drive convergence and perhaps momentarily overwhelm hedonic motivations to feel positive affect.

These results argue for the importance of motivational influences in determining emotion convergence. Even without information on their relative standing in their ingroup, participants converged toward the emotion stereotype as expected. Further, participants reacted to and defied information that they were distinct from other ingroup members by converging even more toward the emotion stereotypes, thus increasing similarity to other ingroup members and presumably satisfying assimilation needs. In summary, results demonstrate convergence of both negative and positive emotions in a minimal group, while simultaneously arguing for motivations underlying self-stereotyping as an important precursor to group-based emotion convergence.

Although the results of the first three studies have conformed to the predictions made on the basis of self-stereotyping, with reported emotions converging toward ingroup emotion stereotypes as predicted, it is possible that such convergence is limited to the expression of emotion. Despite the fact that other evidence has suggested that the changes in self-perception resulting from self-stereotyping are internalized, genuine changes in the self-concept (Sinclair et al., 2006), it is possible that group members in our experiments expressed rather than experienced the appropriate emotion. Such expression might be rather superficially motivated by conformity pressures to show allegiance to or avoid ostracism from their group by adopting the appropriate group standard. Such pressure would seem to be minimized in experimental situations such as ours, in which participants made their reports privately rather than publicly and responded about minimal as well as real

[3] Further analysis confirmed that the anger stereotype exceeded levels of baseline anger reported by participants who did not receive any stereotypes to the same extent that the happiness stereotype exceeded levels of baseline happiness reported by those participants, $p > .15$.

groups. However, emotional self-stereotyping might also encourage the adoption of more semantically based emotion stereotypes as mere descriptions of the self (I am an American, Americans are cheerful, so I describe myself as feeling cheerful) without inducing any genuine change in emotional experience. In a final study, we sought evidence that group members' convergence toward ingroup emotion stereotypes represented a change in their actual emotional experiences, as predicted by IET. We did so by attempting to demonstrate that group members' adoption of ingroup emotions produced effects on their downstream information processing that have been well established in other literatures.

Experiment 4

We intended to demonstrate that experienced group-based emotions were truly changing by showing matching, predictable changes in judgment and decision making. Distinct emotions have specific effects on cognitive processes (DeSteno, Petty, Rucker, Wegener, & Braverman, 2004; Lerner, Gonzales, Small, & Fischhoff, 2003; Moons & Mackie, 2007). One such effect is that anger increases risk-taking (Lerner & Keltner, 2001). If emotion stereotypes cause genuine change in experienced group-based anger, then we expected exposure to stereotypes of a high level of group-based anger to predictably increase risk-taking, at least while people were categorized as group members. Thus, we presented either a low or high anger stereotype for participants' gender ingroup immediately before they completed the commonly used Asian disease problem (Tversky & Kahneman, 1981). In preparation for a hypothetical disease outbreak, participants reported their preference for relatively less or more risky strategies. Because anger unilaterally increases risk-taking (Lerner & Keltner, 2001), we expected increases in group-based anger to reflect increases in risk-taking overall.

We also intended an additional demonstration that the roots of the emotional convergence we have produced lie in the processes of self-categorization and identity. Given the important role of self-categorization in these processes, the extent to which people converge toward emotion stereotypes and the extent to which those emotions influence cognitive processes likely depend on people's level of identification with their ingroup. High identifiers define themselves in group terms more than low identifiers do. Indeed, in comparison to low identifiers, high identifiers are more likely to self-stereotype even if that entails applying negative characteristics to the self (Spears et al., 1997). This strong overlap between individual identity and group identity makes high identifiers particularly likely to converge toward emotion stereotypes: The group is who they are and they feel what the group feels (Smith et al., 2007). Thus, we predicted that the group-based emotion convergence effect demonstrated in the previous studies would be moderated by identification, such that high identifiers converge toward emotion stereotypes more than low identifiers. Because risk-taking is presumably fueled by group-based anger, we expected identification to moderate the impact of emotion stereotypes on both group-based anger and risk-taking.

Method

Participants and design

Participants were 55 female undergraduates participating in exchange for ten dollars. Participants were randomly assigned to one of two emotion stereotype conditions (Low anger or High anger). A measure of ingroup identification served as a continuous predictor in regression analyses.

Procedure

Participants began the study by completing measures of group identification with their gender ingroup. Participants were instructed to think of themselves as members of their gender group before responding to the four centrality subscale items and the four private regard subscale item of the Collective Self-Esteem Scale (Crocker & Luhtanen, 1990). These items assess the importance of group membership to the individual ("Being a member of my gender group is an important reflection of who I am."). After reverse coding half the items, all four were averaged into a measure of gender identification ($\alpha = .78$).

All participants were then presented emotion stereotype information similar to Experiment 3 for their gender ingroup. Participants were shown a 7-point scale anchored by "not at all angry" (1) and "very angry" (7). They were informed that members of their gender ingroup felt either low levels of anger with the number two circled or high levels of anger with the number six circled.

Participants immediately completed the Asian disease problem adapted from Tversky and Kahneman (1981). They were asked to endorse a course of action to deal with a breakout of a virulent disease. Participants were presented with a loss frame version (in which number of deaths was presented) and gain frame version (in which number of lives saved was presented) in random order. In all cases they could express preference for a strategy with certain outcomes ("200 people will be saved") or preference for a riskier strategy ("One-third probability that 600 people will be saved and a two-thirds probability that no people will be saved"). Participants reported their preference on a 6-point scale anchored by very much prefer program A (1) and very much prefer program B (6). We averaged the responses to create a risk-taking index with higher values indicating riskier decision making.

Participants then used 7-point scales anchored by not at all (1) and very (7) to report their emotions as members of their gender ingroup, including items assessing group-based anger (angry, annoyed, irritated, and mad; $\alpha = .90$). They then reported their emotions as individuals including the same four anger items ($\alpha = .89$). After completing demographic questions participants were debriefed and thanked.

Results

We used regression analysis to test our hypotheses. We entered a dummy coded variable for stereotype condition (0 = Low Anger, 1 = High Anger) and centered gender identification in Step 1, and their interaction term in Step 2, of a regression predicting risk-taking. A significant emotion stereotype by identification interaction emerged, $\beta = .38$, $p < .05$, $\Delta R^2 = .08$. Low identifiers' (1 standard deviation below the mean) risk-taking was unaffected by the emotion stereotype, $\beta = -.10$, $p > .61$, but high identifiers (1 standard deviation above the mean) were less risky when presented the low anger stereotype than when presented the high anger stereotype, $\beta = .48$, $p = .01$. Thus, low identifiers who presumably were least likely to be influenced by the emotion stereotype showed no difference in their risk-taking. In contrast, and consistent with predictions, high identifiers who were most likely to experience group-based anger after receiving the high anger stereotype engaged in more risky decision making.

As anticipated, an identical regression predicting group-based anger revealed that participants reported levels of group-based anger consistent with this pattern of risk-taking. Emotion stereotypes produced less group-based anger in participants who received the low anger stereotype than participants who received the high anger stereotype, $\beta = .32$, $p < .05$, $R^2 = .10$, replicating Studies 1–3. Further, a significant interaction showed that identification moder-

ated the impact of emotion stereotypes, $\beta = .36$, $p < .05$, $\Delta R^2 = .07$. Analysis of the simple slopes revealed that low identifiers were unaffected by the emotion stereotype, $\beta = .04$, $p > .82$, but high identifiers converged toward the provided emotion stereotype, $\beta = .58$, $p < .01$. As expected, emotion stereotypes produced more convergence toward the provided stereotype in people who perceived the group as more central to their identity. Although the correlation between group-based anger and risk-taking was in the predicted direction, it did not reach significance, $r = .23$, $p = .13$, perhaps due to low power from this small sample. Thus, formal mediation analyses were not tenable, but we believe that the mirrored pattern for group-based anger and risky decision making is consistent with group-based anger influencing cognitive processes in an expected manner.

A similar pattern of moderation failed to emerge for individual anger. We conducted the identical regression analysis predicting individual anger and found that neither the main effects nor the interaction were significant, all $ps > .42$. Once again, the emotion stereotypes only influenced group-based emotion.

Beyond the identical patterns of group-based anger and risk-taking, these results also highlight the moderating role of group identification. The established group-based emotion convergence effect emerged when identification was not taken into account, replicating previous demonstrations. However, incorporating identification into the analysis showed that the impact of emotion stereotypes may be muted for low identifiers, but particularly effective for high identifiers.

Interestingly, these risk-taking findings demonstrate the spontaneity of group-based emotion convergence. Because the cognitive task was completed before any emotions were reported, group-based emotion convergence apparently occurred spontaneously and quickly. Thus, we can rule out the possibility that group-based emotion convergence occurs only when people are explicitly asked to reflect on their emotional experience.

Overall, these results provide compelling evidence that participants are in fact experiencing genuine changes in their group-based emotions. We find these results to be particularly compelling because of the opaque nature of the measures and procedures used. First, it is unlikely that most of the participants held a lay theory that increased anger was associated with increased risk-taking. Second, the application of such a lay theory presumes that most participants recognized the Asian disease problem as a measure of risk-taking and were able to bias their answers in a way consistent with their lay theory. Third, there is no obvious reason why any participants would be motivated to bias their risk-taking responses in exactly the manner hypothesized. A much more parsimonious interpretation of these findings is that participants experienced genuine emotion powerful enough to influence cognitive processes. This is consistent with previous evidence that intergroup emotions inductions produce emotional experience (Rydell et al., 2008). These previous experiments used other inductions of group-based anger but had identical effects on risk-taking, suggesting that the induction we used here would have the same effects on other measures too.

General discussion

Across all four experiments, group-based emotion convergence was demonstrated without the physical presence of others and without reference to any specific event or object for appraisal. Group-based emotion convergence was demonstrated for fear (Experiment 1), happiness (Experiment 3) and anger (Experiments 1, 2, 3 and 4). Convergence occurred when either one or two simultaneously presented stereotypes were available (Experiments 1, 2 and 4 versus Experiment 3), and emotion stereotypes influenced negative and positive group-based emotions similarly (Experiment 3). Convergence in these group-based emotions was shown for a national group (Experiments 1 and 2), a minimal group (Experiment 3), and gender groups (Experiment 4). In each case, participants systematically reported their emotional experience as group members as moving toward a provided ingroup emotion stereotype. Group-based emotion convergence occurred for only the specific group-based emotion and the specific group membership referenced by the stereotype, showing emotion specificity (Experiments 1 and 2) and group specificity (Experiment 2), respectively. Further, emotion stereotypes exclusively influenced group-based emotions with no effect on individual emotions (Experiments 1, 2, and 4). Overall, there was remarkable precision in the impact of emotion stereotypes on group members' emotional experiences. Thus a salient, activated social category with which group members identify appeared to be necessary and sufficient to produce convergence toward the perceived emotional experience of the ingroup, an outcome we assume to be underpinned by the process of self-stereotyping.

The social categorization and self-stereotyping roots of group-based emotion convergence was further validated by our demonstrations of the role of manipulated and chronic belonging motivation. As predicted, group-based emotion convergence was amplified when assimilation motives were situationally manipulated (Experiment 3) and convergence was moderated by assessed chronic ingroup identification (Experiment 4). These results are consistent with and extend other demonstrations of the powerful impact that identification with particular social categories can have on the self: Not only does the cognitive activation of group membership change our attributes and attitudes, but it also changes our emotional experience.

This finding is particularly significant in light of the evidence we present that categorization-induced emotion convergence represented genuine change in group members' emotional experiences. Recall that emotional self-stereotyping produced predictable changes in cognition consistent with changes in group-based anger (Experiment 4). In contrast to participants merely expressing group-consistent emotions as a way to conform to social pressures, group members appeared to actually experience group-appropriate emotions to the extent that these emotions also changed downstream cognitive processes. This effect of anger on risk-taking occurred before emotions were ever reported and was unlikely to be obvious to participants who would therefore be unable to purposely produce these predicted results.

These studies demonstrate the role of social categorization processes, and the attendant activation of self-stereotyping processes, in producing group-based emotion without the presence of other group members. In these studies, we also produced emotional experiences without presenting a specific event to which group members could react (Smith et al., 2007; following Watson & Clark, 1992; Watson, Clark, & Tellegen, 1988). Although such a strategy almost certainly increased the variability in the content of cognitions generated by participants, this additional error variance would actually reduce the likelihood of finding our hypothesized effects, thus suggesting that our findings are quite robust. Additionally, by leaving the context ambiguous we showed that people need not appraise an event in group-relevant terms in order to converge in their emotional experiences. Although such group-based appraisals may lead to group-based emotions in other situations, simply being categorized as a group member appears sufficient to promote convergence toward the group's perceived emotion stereotype.

These findings also imply that emotional experiences, including group-based emotions, are remarkably malleable and can be relatively quickly changed. Certainly, this is consistent with functional perspectives that explain the extremely quick onset of emotional

experiences as adaptive responses to contextual stimuli (Ekman, 1999). Slow responses to surprising or frightening events would be entirely ineffective in preserving safety. Indeed, emotions can be experienced with minimal cognitive processing (Ruys & Stapel, 2008) and may emerge from automatic processes that quickly produce emotional experiences (Lazarus, 1991; LeDoux, 1991). The current studies are the first to demonstrate that group-based emotions can so rapidly change as a function of emotion stereotypes and self-categorization.

The current findings offer a number of substantial theoretical contributions. First, the current work offers compelling experimental evidence that group members are motivated to converge toward emotion stereotypes, that they converge toward both negative and positive stereotypes (supporting a self-categorization view rather than a process driven purely by self-esteem concerns), and that this convergence is both emotion and group specific. This significantly extends and confirms the mostly correlational evidence of convergence that Smith et al. (2007) provided by comparing associations between patterns of individual emotions, group-based emotions, and sample averages.

Second, whereas Smith et al. (2007) only speculate about several possible explanations of convergence, the current findings provide evidence consistent with self-stereotyping explanations of the process. These findings not only demonstrate the group-specific and emotion-specific nature of this process, but also provide further evidence of its motivational roots by manipulating the presence or absence of optimal distinctiveness concerns. Although emotion stereotypes were clearly and explicitly provided in these studies, group members may still show a considerable degree of self-stereotype driven emotion sharing when stereotypes are not explicitly provided (see Smith et al., 2007, for example). Upon categorization, group-relevant information may be activated and self-stereotyping to this information will no doubt occur. In addition, group-typical events, situations, or symbols may become acutely accessible and may trigger appraisal processes that also generate emotion. Thus self-stereotyping provides a mechanism by which group-based emotions may be produced even in the absence of an explicit triggering event or object. To the extent that there is agreement in the group-relevant information activated by self-categorization, there will also be convergence in the group-relevant emotions triggered.

Third, research following an IET framework has shown that emotions are quite specific to group membership. For example, reported emotions while thinking about oneself as an American can be quite different than emotions reported a moment later when thinking about oneself as a woman, and both may be different than emotions reported when thinking about oneself as an individual. Especially in light of the further evidence that such differences represent genuine changes while relevant group memberships are activated, such flexibility has implications for many social psychological processes. Consider, for example, that in typical social influence experiments, group members learn that other people like them tend to hold a certain attitude, and then the participant's attitude is measured. Typically, attitudes are found to move toward the group norm. If later, attitudes are measured again and are found to no longer represent the group position, the researcher is likely to infer that the initial change reflected mere public conformity and not genuine change. Note however that to our knowledge no study has explicitly differentiated attitudes held as an individual from attitudes as a group member. The current research has demonstrated that such a distinction can be meaningfully made and could lead to predictions for attitudes similar to what was found here: Adherence to group positions while group membership is activated but perhaps different opinions if other memberships or if no memberships are active. Essentially, people could hold very different attitudes depending on whether they are currently thinking of themselves as individuals or as group members and such differences should not be regarded as indicative of public conformity versus internalized change. Thus, this research goes well beyond showing that self-stereotyping works for emotions, but also reveals the broader impact that self-categorization processes can have on psychological processes like attitudinal conformity.

Finally, because these experiments demonstrate that group emotion stereotypes effectively change group-based emotions, they also suggest how such emotions might be strategically altered with the goal of improving intergroup relations. Because people are particularly likely to think of themselves in group terms in intergroup contexts (Turner et al., 1987), group-based emotions play a prominent role in intergroup relations. According to IET, because specific intergroup emotions are associated with distinct action tendencies that encourage consistent behaviors (Mackie et al., 2000, 2009; Smith et al., 2007), changes in intergroup emotions likely change intergroup behaviors as well. This link between group-based emotions and intergroup behaviors means that convergence toward the perceived average experience of the group may regularly impact intergroup relations. For example, perceived group anger might lead to associated approach/attack behaviors such as intergroup aggression. In contrast, perceived group fear would likely encourage avoidance strategies, such as retreat (Maitner, Mackie, & Smith, 2006; Smith et al., 2007). If so, our findings also demonstrate that emotion stereotypes can be used strategically to control and guide the emotional experiences of groups. Group leaders, who already exert considerable influence on the subjective and physiological emotional states of members (McHugo, Lanzetta, Sullivan, Masters, & Englis, 1985), may be particularly well positioned to "represent" (either veridically or strategically) the emotions of group members, essentially presenting an emotion stereotype. The current evidence that group-based emotions can be changed directly is a necessary first step before future work can examine how group-based emotions might alleviate prejudice and discrimination. Thus, these experimental findings make both significant theoretical and practical contributions. In so doing, they underline both the generative advantage of the self-categorization and intergroup emotions theory frameworks and the benefits of regarding emotion as an inherently social rather than purely individual process.

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References

Bargh, J. A., & Chartrand, T. L. (1999). The unbearable automaticity of being. *American Psychologist, 54*, 462–479.

Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin, 17*, 475–482.

Crocker, J., & Luhtanen, R. (1990). Collective self-esteem and ingroup bias. *Journal of Personality and Social Psychology, 58*, 60–67.

DeSteno, D., Petty, R. E., Rucker, D. D., Wegener, D. T., & Braverman, J. (2004). Discrete emotions and persuasion: The role of emotion-induced expectancies. *Journal of Personality and Social Psychology, 86*, 43–56.

Ekman, P. (1999). Basic emotions. In M. Power & T. Dalgleish (Eds.), *Handbook of cognition and emotion*. Sussex, UK: John Wiley & Sons, Ltd.

Gordijn, E., Yzerbyt, V. Y., Wigboldus, D., & Dumont, M. (2006). Emotional reactions to harmful intergroup behavior: The impact of being associated with the victims or the perpetrators. *European Journal of Social Psychology, 36*, 15–30.

Guimond, S., Chatard, A., Martinot, D., Crisp, R. J., & Redersdorff, S. (2006). Social comparison, self-stereotyping, and gender differences in self-construals. *Journal of Personality and Social Psychology, 90*, 221–242.

Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1993). Emotional contagion. *Current Directions in Psychological Science, 2*, 96–99.

Hogg, M. A., & Turner, J. C. (1987). Intergroup behavior, self-stereotyping and the salience of social categories. *British Journal of Social Psychology, 26*, 325–340.

Huck, S. W., & McLean, R. A. (1975). Using a repeated measures ANOVA to analyze the data from a pretest-posttest design: A potentially confusing task. *Psychological Bulletin, 82*, 511–518.

Kessler, T., & Hollbach, S. (2005). Group-based emotion as determinants of ingroup identification. *Journal of Experimental Social Psychology, 41*, 677–685.

Lazarus, R. D. (1991). *Emotion and adaptation*. New York: Oxford University Press.

LeDoux, J. F. (1991). Emotion and the brain. *Journal of NIH Research, 3*, 49–51.

Lerner, J. S., Gonzales, R. M., Small, D. A., & Fischhoff, B. (2003). Effects of fear and anger on perceived risks of terrorism: A national field experiment. *Psychological Science, 14*, 144–150.

Lerner, J. S., & Keltner, D. (2001). Fear, anger, and risk. *Journal of Personality and Social Psychology, 81*, 146–159.

Mackie, D. M., Devos, T., & Smith, E. R. (2000). Intergroup emotions: Explaining offensive action tendencies in an intergroup context. *Journal of Personality and Social Psychology, 79*, 602–616.

Mackie, D. M., Maitner, A. T., & Smith, E. R. (2009). Intergroup emotions theory. In T. D. Nelson (Ed.) *Handbook of prejudice, stereotyping, and discrimination.* Mahwah: Lawrence Erlbaum Associates.

Mackie, D. M., Silver, L. A., & Smith, E. R. (2004). Intergroup emotion: Emotion as an intergroup phenomenon. In L. Z. Tiedens & C. W. Leach (Eds.), *The social life of emotions* (pp. 227–245). New York: Cambridge University Press.

Mackie, D. M., & Smith, E. R. (1998). Intergroup relations: Insights from a theoretically integrative approach. *Psychological Review, 105*, 499–529.

Maitner, A. T., Mackie, D. M., & Smith, E. R. (2006). Evidence for the regulatory function of intergroup emotion: Implementing and impeding intergroup behavioral intentions. *Journal of Experimental Social Psychology, 42*, 720–728.

McHugo, G. J., Lanzetta, J. T., Sullivan, D. G., Masters, R. D., & Englis, B. G. (1985). Emotional reactions to a political leader's expressive displays. *Journal of Personality and Social Psychology, 49*, 1513–1529.

Moons, W. G., & Mackie, D. M. (2007). Thinking straight while seeing red: The influence of anger on information processing. *Personality and Social Psychology Bulletin, 33*, 706–720.

Pelham, B. W., & Swann, W. B. (1989). From self-conceptions to self-worth: On the sources and structure of global self-esteem. *Journal of Personality and Social Psychology, 57*, 672–680.

Pickett, C. L., Bonner, B. L., & Coleman, J. M. (2002). Motivated self-stereotyping: Heightened assimilation and differentiation needs result in increased levels of positive and negative self-stereotyping. *Journal of Personality and Social Psychology, 82*, 543–562.

Rausch, J. R., Maxwell, S. E., & Kelley, K. (2003). Analytic methods for questions pertaining to a randomized pretest, posttest, follow-up design. *Journal of Clinical Child and Adolescent Psychology, 32*, 467–486.

Ruys, K. I., & Stapel, D. A. (2008). The secret life of emotions. *Psychological Science, 19*, 385–391.

Rydell, R. J., Mackie, D. M., Maitner, A. T., Claypool, H. M., Ryan, M. J., & Smith, E. R. (2008). Arousal, processing, and risk-taking: Consequences of intergroup anger. *Personality and Social Psychology Bulletin, 34*, 1141–1152.

Simon, B., & Hamilton, D. L. (1994). Self-stereotyping and social context: The effects of relative in-group size and in-group status. *Journal of Personality and Social Psychology, 66*, 699–711.

Sinclair, S., Hardin, C. D., & Lowery, B. S. (2006). Self-stereotyping in the context of multiple social identities. *Journal of Personality and Social Psychology, 90*, 529–542.

Smith, E. R. (1993). Social identity and social emotions: Toward new conceptualizations of prejudice. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 297–315). San Diego: Academic Press.

Smith, E. R., & Henry, S. (1996). An in-group becomes part of the self: Response time evidence. *Personality and Social Psychology Bulletin, 22*, 635–642.

Smith, E. R., Seger, C. R., & Mackie, D. M. (2007). Can emotions be truly group-level? Evidence regarding four conceptual criteria. *Journal of Personality and Social Psychology, 93*, 431–446.

Spears, R., Doosje, B., & Ellemers, N. (1997). Self-stereotyping in the face of threats to group status and distinctiveness: The role of group identification. *Personality and Social Psychology Bulletin, 23*, 538–553.

Strack, F., Martin, L. L., & Stepper, S. (1988). Inhibiting and facilitating conditions of the human smile: A nonobtrusive test of the facial feedback hypothesis. *Journal of Personality and Social Psychology, 54*, 768–777.

Turner, J. C. (1991). *Social influence*. Pacific Grove, CA: Brooks/Cole.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, England: Blackwell.

Turner, J. C., & Oakes, P. J. (1989). Self-categorization theory and social influence. In P. B. Paulus (Ed.), *The psychology of group influence* (pp. 233–275). Hillsdale, NJ: Erlbaum.

Turner, J. C., Oakes, P. J., Haslam, S. A., & McGarty, C. (1994). Self and collective: Cognition and social context. *Personality and Social Psychology Bulletin, 20*, 454–463.

Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science, 211*, 453–458.

Watson, D., & Clark, L. A. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the five-factor model. *Journal of Personality, 60*, 441–476.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.