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Subtle activation of a social categorization triggers group-level emotions

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ABSTRACT

Previous research [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] has demonstrated that when people are explicitly asked about the emotions they experience as members of a particular group, their reported emotions converge toward a profile typical for that group. Two studies demonstrate that the same type of convergence occurs when a group identity is made situationally salient through priming, without an explicit request to report group-level emotions. People who identify more strongly with the group converge more, and show more similarity between their group-primed emotions and explicitly reported group-level emotions. This research confirms that activating a social identity produces convergence for emotions as well as for attitudes and behaviors. It also suggests that some previous emotion research may have tapped group rather than individual-level emotions, potentially requiring some reconceptualization.

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Introduction

Suppose you are walking down a busy street in New York City. You may be happily enjoying the weather, or irritated because you cannot find your destination. While crossing the street, you may see someone wearing a t-shirt with your university's insignia. You may then walk the next block with a sense of pride in your step, at which point you see a fireman in full uniform. Then you may feel sadness for the 9/11 tragedy, as you begin to think about yourself as an American who was victimized on that day (even if you personally were not harmed). By the time you have found your destination, several social identities may have been explicitly or implicitly activated, each of which has subtly affected your emotions.

Group-based emotions

The impact of social identity on emotions is the main focus of Intergroup Emotions Theory (Mackie, Devos, & Smith, 2000; Smith, 1993; Smith, Seger, & Mackie, 2007). This theory holds that the process of social categorization leads people to experience emotions in response to situations and events that they appraise as affecting their ingroup, even if the individual is not directly or personally involved. As originally postulated by Social Identity Theory, thinking of oneself as a group member infuses the group with affective significance, a key property of the psychological self (Taj-

fel, 1982). Therefore, people experience group-based emotions when they think of themselves as members of socially significant groups, and these emotions have important implications for intergroup attitudes and behavior (Cottrell & Neuberg, 2005; Mackie et al., 2000; Maitner, Mackie, & Smith, 2007; Miller, Smith, & Mackie, 2004).

A recent investigation of group-based emotions (Smith et al., 2007) supported four key hypotheses that in combination suggest that group-based emotions are meaningfully distinct from individual-level emotions, and are potent predictors of group-related attitudes and behavior. In these studies, instead of examining emotions experienced in response to specific situations or events (e.g., Mackie et al., 2000; Yzerbyt, Dumont, Gordijn, & Wigboldus, 2002), Smith et al. (2007) assessed group members' general level of several emotions such as happiness, anger, anxiety, and pride – which is a common technique in emotion research (e.g., Watson & Clark, 1992). The results confirmed four hypotheses: First, group-based emotions reported by an individual are statistically distinct from the person's individual-level emotions, forming a qualitatively different profile. Second, group-based emotions correlate with group identification. Positive group emotions as well as anger at an out group are experienced more strongly by high group identifiers, while other negative group emotions (guilt, irritation, etc.) correlate negatively with identification. Third, different members of the same group (such as Americans) tend to experience a similar profile of emotions based on that group membership; in other words group members tend to converge to a prototypical pattern of group emotions. This convergence is stronger for those who identify more strongly with the group. Fourth, group-based emo-

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tions predict group-relevant attitudes and behavioral tendencies such as the desire to confront or attack a rival out-group, above and beyond the weak predictive power of individual-level emotions.

Based on this evidence, then, we can say that people experience distinct patterns of group emotions for each meaningful group membership they have, as well as for their individual identity. Group and individual emotions are distinct in terms of their causes, appraisals of events as group-relevant versus as individually relevant. They also differ in terms of their effects, with group-level and not individual-level emotions predicting group-relevant behaviors such as affiliating with ingroup members or confronting an outgroup (Smith et al., 2007). Therefore, it is important to know *which* type of emotions (group or individual level) a person is experiencing and reporting in any given situation. If someone feels angry, proud, guilty, etc., is he or she feeling that way as an individual (because of his or her individual situation), or as a group member (because of some situation that affects the group, though not necessarily on the individual)?

Smith et al. (2007) used differently worded questions to elicit reports of individual versus group-level emotions. For example, in Study 1 participants were asked, “As an individual, to what extent do you feel each of the following emotions?” followed by a list of emotions including proud, disgusted, happy, guilty, etc. To measure group emotions, participants were first asked four questions about their identification with the group (Indiana University students) such as “I see myself as an IU student.” They were then asked “As an Indiana University student, to what extent do you feel each of the following emotions?” with the same list of emotions. Study 2 used slightly different wording, “When you think about yourself as an IU student, to what extent do you feel each of the following emotions?” and obtained similar results.

Explicit questions such as these, which ask people to report the emotions they feel when they think of themselves as a member of a particular group, are convenient means for eliciting reports of group emotions. However, Intergroup Emotions Theory specifies that *whenever* people are thinking of themselves in terms of a particular group membership – whenever a social rather than personal identity is salient – people’s emotional experiences and reports will be shaped and determined by that group membership. Not only an explicit question about group emotions but any event or situation that activates a group identity is expected to result in people experiencing and reporting group (rather than individual) emotions. In other words, IET predicts that *whenever people’s social identities are activated, by whatever means, their responses to simple questions like “What emotions do you feel?” will be largely group-based, rather than individual-level, emotions.*

If confirmed, this hypothesis has three important implications:

1. *Situational activation of group membership produces convergence of emotions as well as attitudes and behaviors.* Previous research has demonstrated that activating a social identity (e.g., through priming manipulations) influences many types of attitudes and social behaviors. For example, Lee and Ottati (1995) demonstrated that simply priming a social category increased perceptions of ingroup homogeneity. When Baldwin, Carrell, and Lopez (1990) used the Pope’s disapproving face as a prime, Catholic students who regularly practiced their religion (presumably indicating higher ingroup identification) reported lower self-evaluations overall. Women who were subtly reminded of their gender categorization spoke in a less assertive style (Carli, 1990) and displayed a stereotype-consistent shift in implicit and explicit attitudes toward domains such as arts and mathematics (Steele & Ambady, 2006). Although this previous research has examined many types of attitudes and behaviors, it has not considered emotions. Thus, a demonstration that activating a social identity through subtle means shifts people’s toward experiencing the group-level emotions would be novel.
2. *Spontaneous convergence of emotions following subtle group activation suggests that group-based emotions are actually experienced.* Previous research using explicit questions about group emotions may be considered to tap, at least in part, into explicit knowledge about groups and emotions (e.g., “I know that Americans are supposed to feel proud and angry, so when you ask me how I feel as an American I will report these stereotypic emotions”). If people’s emotion reports in response to a simple “how do you feel” inquiry following a group-relevant prime also reflect group-level emotions, it would suggest that these emotions are rapidly and automatically constructed and experienced when a social identity becomes salient. This is especially true to the extent that the priming is subtle or not seen as related to the emotion questions.
3. *In some existing research, it is ambiguous whether individual or group-level emotions have been assessed.* Literally hundreds of studies on emotion have used self-report measures of current (or retrospective) emotions. If our hypothesis is confirmed, it would mean that some previous studies of emotion might actually have assessed group-based rather than individual-level emotions – probably contrary to the assumptions of the researchers involved. This is especially likely when people’s emotional reactions to group-relevant events are measured. For example, people have been asked to report the emotions that they felt in response to the attacks of September 11th, 2001 (e.g., Skitka, Bauman, & Mullen, 2004). Because those attacks targeted America as a group, it is plausible that people’s reports of fear, anger, etc. actually represent group- rather than individual-level emotions. This conclusion would be strengthened if (a) many Americans reported the same group-typical profile of emotions in response to the attacks, and (b) people who identify more strongly with the American group converge more strongly to the group profile (Smith et al., 2007).

In the General Discussion we will return to these major theoretical implications of our core hypothesis that *activating people’s social identities will lead them to report group-based, rather than individual-level, emotions.* To test the hypothesis, we conducted two studies examining whether subtle priming techniques that activate group membership lead people’s emotions to converge on a group-typical profile.

Hypotheses

In this paper, we use the term *individual-level emotions* or *individual emotions* for emotions measured with questions about how the participant feels at the moment, before any mention of a social group (Study 1). The term *explicitly reported group emotions* refers to emotions measured with a question that invokes a particular group membership in asking how the participant feels at that moment: “As an American, to what extent do you feel angry, happy, ...?” And *group-primed emotions* represents an assessment of how the respondent feels at the moment, measured after some prime stimulus that is intended to activate a group identity. The latter parallels the method used in existing studies that demonstrate effects of an activated group identity on attitudes or behavior: the group is primed, and then an attitude or behavior is simply measured (e.g., with a “what is your opinion” question).

Our studies use two different priming methods to test three specific hypotheses:

- (1) People's group-primed emotions will be similar to reports given by other group members exposed to the same prime (i.e., emotions will converge toward a group-typical profile of emotions), and will differ from emotions reported by the same respondents thinking of themselves as individuals.
- (2) Group-primed emotions will be similar to the individual's explicitly-reported emotions for that same group.
- (3) Both of these effects will be stronger for individuals who are higher in group identification.

Experiment 1

This study presented music clips, with a bogus cover story, as a subtle activation or prime of group categorization. It was expected that (a) individuals' reports of their emotions following a group-relevant musical prime would converge toward a group-typical profile of emotions, and (b) that those group-primed emotions would resemble explicitly reported group-level emotions. High levels of group identification should strengthen both of these effects.

Method

Participants

Participants at Indiana University Bloomington ($N = 98$) were informed that they would be listening to and giving their ratings of marching band music, in exchange for course credit.

Procedure

Once participants read and signed an informed consent statement, the paper questionnaire packet was distributed. The first page presented a list of 13 emotions (angry at self, satisfied, afraid, hopeful, proud, disgusted, uneasy, angry at other people, happy, grateful, guilty, respectful, and irritated) with instructions to rate, on separate 7-point scales anchored by *not at all* and *very much*, the extent to which the participant felt each of these emotions as an individual (cf. Smith et al., 2007). The wording was: "We are interested in how an individual's mood can stay stable or quickly change. Please circle the number that best indicates how you feel right now." This served as a measure of individual-level emotions.

Participants then listened to four 1-min instrumental, marching band song clips, including the *Star-Spangled Banner* (US prime) and *Indiana Fight!* (the IU fight song). Filler songs included *Eye of the Tiger* and Richard Strauss's *Also sprach Zarathustra* (better known as the theme of the movie *2001*). Song order was randomized. Following each song, participants rated their liking for the song and its perceived complexity (congruent with the cover story) and rated their emotions. The dependent variables were emotions rated following the IU music prime, and following the US music prime. Respondents also indicated whether or not they recognized each song. Following all of the music primes, explicit reports of group-level emotions for both groups were assessed (using the wording "As an [American/ IU student] to what extent do you feel the following emotions"; cf. Smith et al., 2007). Participants completed a four-item group identification questionnaire (used previously by Smith et al., 2007; cf. Doosje, Ellemers, & Spears, 1995) for each group. Sample items include "I identify with other [Americans/IU students]" and "I see myself as an [American/IU student]".

Analytic approach

Our analyses for these studies follow those used by Smith et al. (2007). To test Hypothesis 1 (convergence of group-primed emotions to a typical profile), regression analyses examine the extent

to which a participant's level of a particular group-primed emotion (e.g., guilt following the American prime) is predicted by (a) the participant's individual-level guilt, and (b) the prototype level of group guilt, i.e., the average level of group guilt reported by all people exposed to the American prime. Analyses examining this question were conducted separately for each group. A positive coefficient for the individual-level emotion would show that (as expected) there is some degree of similarity or overlap between people's individual and group-level emotions (Smith et al., 2007 found around a .30 correlation on the average). More important, a positive coefficient for the group prototype emotion would show that participants' group-primed emotions converge toward a specific prototype or typical emotion profile.¹ To test the prediction that group identification moderates the convergence process, we also included group identification (centered at a mean of zero) as a further independent variable, as well as interactions between identification and the other two predictors. An interaction of group identification with the average group-primed emotions would indicate that, as expected, convergence of group-primed emotions toward the prototype is greater for participants who identify more strongly with the particular group.

A hierarchical linear models approach was used with the specific emotions within each participant as the first level, and individual participants as the second level. Using SAS PROC MIXED (Singer, 1998)² the prediction equation was set up at the first (emotions) level with the group-primed emotion as the dependent variable, and the two independent variables listed above: (a) the participant's report of the emotion at the individual level and (b) the average across all participants of the level of the emotion reported following the group prime.

To test Hypothesis 2, convergence of group-primed emotions toward the same participant's explicit reports of group-level emotions, a similar analysis is used. As above, one predictor is the participant's report of the individual-level emotion (e.g., guilt) and the second is the participant's level of explicitly reported group guilt (i.e., the level of guilt he or she reports feeling "as an American"). Obviously, if the prime had no effect so the emotions reported after the prime were just the participant's individual-level emotions, we would obtain regression coefficients of 1.0 (for individual emotions) and 0.0 (for explicit group emotions). On the other hand, if the prime made the participant shift 100% into a group identity, individual emotions might no longer be a predictor at all and the coefficients would be 0.0 and 1.0, respectively. More realistically, we expect the prime to cause participants to report emotions that are related to the group emotions, but also (as in Smith et al., 2007) there will be some overlap of individual and group emotions; thus, both regression coefficients will be significantly positive but less than 1.0. As before, we also included group identification (centered at a mean of zero) as a further independent variable, as well as interactions between identification and the other two predictors. An interaction of group identification with explicit group emotions would indicate that, as expected, convergence of group-primed emotions toward explicit group emotions is greater for participants who identify more strongly with the particular group.

Note that in these analyses we do not formulate or test hypotheses regarding specific emotions (e.g., that priming with one par-

¹ In this analysis, each participant's own data is part of the computation of the overall mean profile of group-primed emotions. It might be considered "purer" to exclude the individual from the mean. However, this would make no difference in practical terms. It is possible to calculate the expected correlation between the vector of means based on all N participants and the vector based on $N - 1$ (excluding a single participant), and assuming independence and equal variance across participants, the expected correlation is over .99. In addition, a supplementary analysis examining this issue was reported in Smith et al. (2007, p. 439, footnote 6) and produced results essentially identical to the main analysis.

² Similar analyses were used in Smith et al. (2007).

ticular group will increase anger or decrease happiness, etc.). Rather, the analyses represent a correlational approach that assesses whether the pattern or profile of primed emotion reports (across the 13 emotions, chosen to represent a range of both positive and negative emotions) converges toward a prototypical profile of group emotions, or matches the group emotions that are reported in response to an explicit question.

Results and discussion

Five subjects who were not US citizens were excluded from analysis. Our first analysis examined whether group-primed emotions converge to a group-typical profile of emotions. Table 1 shows that participants' individual-level emotions overlapped with group-primed emotions to a significant extent. More important, the mean profile of emotions following each group prime significantly predicted emotions felt after that prime, over and above the variance explained by the individual-level emotions. This pattern indicates that the group prime leads to convergence of emotions toward the typical emotions for the primed group.

The final column shows that, for the US group, individuals high in ingroup identification had a stronger convergence of their emotions toward the group's mean emotions. This effect does not reach significance for the IU prime, although it is in the expected direction. The interactive effect of group identification is theoretically important because it indicates that the convergence of the group-primed emotions is a group-level phenomenon, rather than just representing a convergence to emotions elicited by the tempo or other superficial factors of each song. At least for the US group, high identifiers showed stronger convergence than low identifiers, which would not be expected if the qualities of the song simply and directly induce specific emotions.

The above analysis tests the first hypothesis, regarding the convergence of group-primed emotions toward a group-typical profile. Hypothesis 2 concerns whether emotions elicited by the subtle activation of group membership are the same emotions that people report when asked to deliberately think of themselves as group members (as in Smith et al., 2007). These results are reported in Table 2. First, some overlap was expected between individual-level emotions and emotions following the group primes, and indeed that was found. As seen in the table, individual emotions were a significant predictor of group-primed emotions for both groups. Of greater theoretical interest, explicitly reported group-level emotions also predicted group-primed emotions, at roughly the same level as individual emotions. Further, it was hypothesized that participants with higher levels of group identification would show stronger convergence toward their group-level emotion reports. As can be seen in the rightmost column, group identification indeed interacted with explicitly reported emotions, indicating that the convergence of primed emotions toward the group-level emotions was significantly stronger for participants with higher levels of group identification. Group identification negatively interacted with individual-level emotions for both groups, showing that for those who identify more strongly with a group, their group-primed emotions show less overlap with their individual emotions.

Table 1

Unstandardized regression coefficients predicting each respondent's level of emotion following a group prime, Experiment 1.

Group	Intercept	Individual emotions	Average group-primed emotions	Group identification	Group ID X individual emotions	Group ID X group-primed emotions
Americans	-.33**	.30***	.82***	-.49**	-.09	.25**
IU students	-.42*	.30***	.83***	-.14 [†]	.002	.06

Note: Values represent unstandardized regression coefficients from a multilevel analysis of convergence, predicting each respondent's level of emotion following a group prime from the same person's individual level of that emotion and the average level of that group-primed emotion (averaged across all participants).

* $p < .05$.

** $p < .01$.

*** $p < .001$.

These analyses supported all three hypotheses. Emotion reports primed by group membership converged toward the average or prototypical profile of group-primed emotions (Hypothesis 1; see Table 1). These results suggest that group-primed emotions were indeed shared among group members in the same manner as when people explicitly report their group emotions (Seger, Smith, Kinias, & Mackie, 2009; Smith et al., 2007). In addition, group-primed emotions resembled the emotions reported by subjects in response to explicit group-emotion questions (Hypothesis 2; see Table 2). Furthermore, in three of the four cases shown in Tables 1 and 2, convergence was stronger for high identifiers (Hypothesis 3). The results therefore provide evidence that group-relevant environmental stimuli more effectively activate group-level emotions for high identifiers.

Our second study has two goals. First, for the sake of generality we wished to use a different priming technique, the presentation of photographs. More important, the second study used a between-subjects design. It is possible that the within-subjects design of Study 1 may have suggested to participants that they should report different profiles of emotions at different times in the course of the experiment. That is, the repeated presentation of emotion questions may have artificially induced individuals to report different emotions from one time to the next (see Schwarz & Sudman, 1996). Study 2 avoids this possibility by asking participants about their current feelings only once, following a set of photos relevant to either IU or US categorizations.

Experiment 2

This experiment uses a different priming methodology that may be analogous to individuals' visual experience in the real world. This study used photographs of group-related stimuli to subtly activate individuals' social categorizations. Photographs have often been used to activate social categories (e.g., Kawakami, Young, & Dovidio, 2002). Furthermore, visual stimuli such as flags and other symbols are often used in advertising and political campaigns, in order to appeal to (or associate one's product or candidate with) an identity. This study examined whether group-related images can lead individuals to experience emotions that are similar to the emotions that they explicitly report as a group member.

It was again hypothesized that individuals' emotions following the prime would converge toward the participant's own explicit reports of group emotion, with stronger effects for those high in ingroup identification. The between-subjects design of Study 2 makes it implausible that this expected pattern would result from perceived demands to report different emotions from one time to the next.

Method

Participants

Participants ($N = 82$) were told that they would be completing a visual perception task in which they would be observing photographs and quickly making holistic judgments about each photograph.

Procedure

Each participant was exposed to ten photographs related to America (e.g., the White House, an American flag, the Liberty Bell) or Indiana University (e.g., Assembly Hall, a 'Hoosiers' t-shirt, the campus arboretum), in a between-subjects design. Participants were instructed to type the dominant color of the photograph as quickly as possible. Following this task, they rated their current emotions (using the same emotion list as Experiment 1) with the instructions, "For this part of the study, please rate the emotions that you are feeling right now by clicking the appropriate number. Focus only on how you feel right now." Participants finally completed group identification measures for Americans and Indiana University students, and rated their explicit emotions for both groups (i.e., "As an Indiana University student/American, how do you feel?").

Results and discussion

This analysis is the same as that presented in Table 2 for Experiment 1, except that individual emotions were not included as a predictor (they were not measured in this study because we wished to measure emotions only once for each participant). Table 3 shows the convergence of participants' emotions following the group-relevant prime to their explicitly reported emotions for the same group. As can be seen in the third column, explicitly reported IU emotions predicted emotions following the IU prime, and explicit US emotions predicted emotions for participants exposed to the US prime. Once again, the interaction between group-level emotions and group identification is positive for both groups and reaches $p < .06$ for the US group. Not only do these results replicate the convergence of group-primed emotions to explicitly reported ingroup emotions, as found in Experiment 1, the two groups in this study virtually mirror each other in the magnitude of convergence.

Is convergence group specific?

Our analyses of both studies show that participants primed with group-relevant stimuli converge toward the same emotion profile that they report when explicitly asked about group-based emotions for the same group (Smith et al., 2007). Is it possible that any group

prime might produce convergence toward a generic profile of "groupy" emotions, as an alternative to our theoretical assumption that the convergence is toward the specific group's profile? We are not as well placed as we would like to be able to answer this question, for the American and IU identities are similar in many ways: both are social categories rather than smaller, face-to-face task-oriented or primary groups, and both are regarded by most participants as important, positive, prideful social identities. Indeed, the average (across participants) correlation between IU and US explicit emotions is .66 and .68 in the two studies, indicating that the two groups have fairly similar emotion profiles. Nevertheless, convergence toward the explicit emotions reported for the primed group is in every case stronger than in a control analysis in which explicit emotions for the alternative (non-primed) group is included instead. Table 4 shows these results. Given the high correlation between the two group profiles, one cannot expect to find a zero coefficient for the alternative group emotions, but as the table shows, that coefficient is always smaller. Although future research should use groups with more differentiated emotion profiles, these analyses support the conclusion that, as predicted, convergence is toward the specific emotions reported for the primed group, rather than toward a generic emotion profile that would equally fit any group.

General discussion

This paper examined whether priming manipulations that subtly activate a social identity will cause people to experience and report group-based rather than individual-level emotions in response to a simple question about what emotions are currently felt. Our studies used different techniques to increase the salience of either Indiana University or American identities: listening to music and viewing photographs. Results were consistent across these studies. Individuals exposed to group-related primes reported emotions that were distinct from their individual-level emotions, and converged toward a group-typical profile of emotions (Hypothesis 1). Moreover, group-primed emotions converged toward the participant's explicit reports of group-level emotions, elicited by questions similar to those used by Smith et al. (2007) (Hypothesis 2). Generally (in four of six cases at the $p < .06$ level or better) group identification moderated the amount of conver-

Table 2
Unstandardized regression coefficients predicting each respondent's level of emotion following a group prime, Experiment 1.

Group	Intercept	Individual emotions	Explicit group emotions	Group identification	Group ID* individual emotions	Group ID* explicit group emotions
Americans	.09	.42***	.47***	-.19	-.18***	.20***
IU students	-.02	.41***	.47***	-.05	-.09*	.10**

Note: Values represent unstandardized regression coefficients from a multilevel analysis, predicting each respondent's level of emotion following a group prime from the same person's individual level of that emotion and their explicitly reported level of that group emotion.

* $p < .05$.
** $p < .01$.
*** $p < .001$.

Table 3
Unstandardized regression coefficients, predicting each respondent's level of emotion following a group prime, Experiment 2.

Group	Intercept	Explicit group emotions	Group identification	Explicit group emotions* Group ID
Americans	1.43***	.57***	-.32*	.07*
IU students	1.12***	.66***	-.25	.06

Note: Values represent unstandardized regression coefficients from a multilevel analysis, predicting each respondent's level of emotion following a group prime from the same person's individual level of that emotion and their explicitly reported level of that group emotion, Experiment 2.

* $p < .06$.
* $p < .05$.
*** $p < .001$.

Table 4
Coefficients for explicit group emotions for the primed and unprimed groups.

Group	Study	Explicit group emotions for primed group	Explicit group emotions for unprimed group
Americans	1	.47***	.36***
IU students	1	.47***	.20***
Americans	2	.57***	.43***
IU students	2	.66***	.30***

Note: Values represent unstandardized regression coefficients from multilevel analyses, showing coefficients for explicit group emotions for the primed group (reproduced from Tables 2 and 3) and coefficients from a control analysis in which the explicit group emotions for the alternative (unprimed) group was substituted. *** $p < .001$.

gence, with high identifiers converging more toward the group emotion prototype and reporting group-primed emotions that are more similar to their explicit group emotions (Hypothesis 3). This result is important in showing that the emotions resulted from the activation of a social identity within the individual, rather than some general emotional reaction to the details of the primes themselves (e.g., to the tempo of the music or the pleasantness of the photo).

As we discussed in Smith et al. (2007), several distinct mechanisms may contribute to the emotion convergence we have demonstrated. One is emotional contagion (Neumann & Strack, 2000), the tendency for people to take on the emotions displayed by fellow group members with whom they interact. However, this mechanism seems more relevant for small face-to-face groups than for the social category groups we study here. A second possibility is that people know ingroup norms (standards, expectations) for appropriate emotions, and conform to those norms when a group becomes salient – in exactly the same way that they conform to group norms for attitudes and behaviors. Norm conformity does not imply mere superficial display; rather, people generally internalize ingroup norms, regarding them as the right and appropriate ways to think, feel, and act (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Finally, group members may converge on an emotion profile because thinking about the group makes key group-relevant events salient, and appraisals of such events (e.g., as threatening or angering) are generally shared among group members, leading to a common profile of emotions. This study is unable to distinguish among these mechanisms, which can be teased apart in future research (e.g., using minimal group paradigms).

Emotions shaped by social identity activation

It has been previously demonstrated that the activation of a social categorization leads to changes in attitudes and behaviors, which become more group-typical for high identifiers. The research presented here demonstrates for the first time that the activation of a social categorization has a similar effect on emotions, reported in response to a neutral “How do you feel” emotion question that does not contain specific instructions to think of oneself as a group member. Previous research (e.g., Doosje, Branscombe, Spears, & Manstead, 1998; Gordijn, Yzerbyt, Wigboldus, & Dumont, 2006; Yzerbyt, Dumont, Wigboldus, & Gordijn, 2003) has shown that changing an individuals’ self-categorization leads to differing emotions in response to a specific target event. However, this previous research has not looked at the convergence to a profile of general or chronic emotions, but rather at predicted shifts in one or two specific emotions (e.g., happiness, anger) in response to a particular event. Unlike our studies, previous research does not allow for comparison between subtly-activated and explicitly reported group-level emotions. Because emotions predict attitudes and behaviors on both the individual (Glasman & Albarracín, 2006) and collective levels (e.g., Liss, Crawford, & Popp, 2004), the finding of emotion convergence due to identity activation fills a significant gap in the social identity literature.

Group-based emotions genuinely experienced, not mere explicit knowledge

Previous research (Seger et al., 2009; Smith et al., 2007) demonstrates that explicit reports of group emotions converge toward a prototypical profile of emotions for a specific group. The current studies extend those results by showing that similar convergence occurs when a specific social identity becomes salient through

priming. These results cast doubt on the idea that individuals simply report emotional stereotypes, or how they believe they *should* feel, when asked how they feel as a group member. This is because our priming manipulations were relatively subtle, and participants were asked simply and directly to report what emotions they felt (rather than what emotions they felt as a member of a particular group).

Other research further supports the conclusion that group emotions are actually experienced. Smith et al. (2007) show that group emotions predict behavioral action tendencies such as the desire to confront outgroup members or to affiliate with or support the ingroup. If individuals were simply reporting their general knowledge or stereotypes about group emotions, it is unlikely that these emotion reports would predict behaviors. Rydell et al. (2008) provide further evidence that group emotions are actually experienced, in that they involve the same cognitive and physiological responses as individual-level emotions. Three studies demonstrate that group-based anger involves arousal that can be misattributed, reduces systematic processing of persuasive messages, and increases risk taking. If people were only reporting specific emotions that they believed were typical of a particular group, such cognitive and physiological changes would not be expected to occur.

Standard emotion questions may elicit group emotions

Another implication of this research is that results of some existing studies may have to be reinterpreted. Many previous studies have asked participants to report emotional reactions to group-level events such as terrorist attacks or discriminatory behaviors directed at them (e.g., Mendes, Major, McCoy, & Blascovich, 2008; Skitka et al., 2004). Because events of these sorts are likely to activate relevant group identities, we suggest that such studies may often tap group rather than individual-level emotions (as assumed by the researchers). As an example, suppose a woman experiences a negative outcome such as a low grade in a math course or a rejection for a promotion at work. Her emotional reactions to the event (disappointment, anger, anxiety, etc.) may be individual-level, *if* she appraises the event as interpersonal in nature, caused by her own or other people’s unique personal characteristics. Alternatively, her emotional reactions may be group-level, *if* her appraisals indicate that the event is based on group memberships – that is, if she considers that the behavior constitutes discrimination against women. We could be more confident that the emotion is group-based if the person attributed the event to others’ group-based prejudice, or if the emotions were felt more intensely by people who identify more strongly with their group.

The same point holds for group identification that is chronic and long-lasting, not only for situationally triggered, temporary group identification. For example, a woman who is chronically highly identified with her gender group, perhaps one who is active in women’s rights organizations, probably goes around interpreting and appraising many everyday events for the ways they impact women as a group, as well as the ways they impact her as an individual. Group-based emotional responses, such as group pride, anger, or disappointment, would naturally follow, and would be difficult to disentangle from emotions that the woman experiences as an individual based on events that affect only her (and not her group). Our main point here is that the simple question “what emotions do you feel” cannot distinguish between individual and group emotions. And because group and individual-level emotions are quantitatively and qualitatively distinct (Smith et al., 2007), it is conceptually important to know which is being measured in any particular study.

The occasionally ambiguous distinction between individual and group-level emotions has several implications. First, people can rapidly shift their self-categorization among different group identities and a personal or individual identity (Turner et al., 1987). Our within-subjects Experiment 1 confirms other research (Moons, Lenoard, Mackie, & Smith, 2007; Smith et al., 2007) in showing that individuals can quickly change from feeling emotions based on one identity to another identity. Thus, the emotions that people report at one time (when in one identity) may not generalize to other time points or other aspects of their lives. If a different social identity were to become salient, experienced emotions would change, and their effects on cognition, behavior, and well-being may shift correspondingly. If the woman in our example is upset about her negative outcome *as a woman*, a phone call from her mother that activates a personal, familial identity is likely to change her emotions. In fact, such shifts in identity may be a way to reduce negative feelings in intergroup interactions (Ray, Mackie, Rydell, & Smith, 2008).

Second, the strategies that people use to regulate their group-level emotions may be qualitatively different from the strategies that occur when individual emotions are salient. To regulate a group emotion one can disidentify from the group or reappraise the issue (Smith & Mackie, 2006). For example, if someone feels group-level guilt due to their group's historical misdeeds, they may lower their level of identification with the group. Alternatively, they may seek to rationalize and justify their group's actions (Doosje et al., 1998) to diminish guilty feelings. This reappraisal may be easier than for individual-level guilt, which may require personal sacrifices and reparations to overcome.

Third, group- and individual-level emotions have different effects on behavior. Group rather than individual emotions predict group-relevant actions, such as affiliation with the ingroup and confrontation or avoidance of the outgroup (Smith et al., 2007). Moreover, because group emotions are socially shared, when they motivate such actions people are likely to feel less personal responsibility for their actions, and collective behaviors may be more extreme than individually-motivated behavior (Festinger, Pepitone, & Newcomb, 1952), or may be governed more by group norms than by individual attitudes (Postmes & Spears, 1998). For example, aggressive behaviors that are unlikely to be exhibited by a lone individual may occur more frequently in the context of a militant group protest when most group members share feelings of anger and resentment.

All these considerations suggest that it is important for researchers to understand in any given instance whether reported emotions are individual- or group-level in nature, despite the occasional difficulty of doing so.

Future directions

The current studies used two different priming methodologies for two groups. However, it is likely that specific types of group-relevant primes may result in differing profiles of emotions. For example, Americans primed with images of famous Americans may feel quite differently than those primed with the September 11 attacks or images related to American slavery.³ However, previous research suggests that highly identified individuals may reinterpret or reappraise situations to avoid feeling negative group emotions such as anxiety or guilt (Doosje et al., 1998). Therefore, for primes that elicit anxiety or guilt, it is possible that a greater degree of emotion convergence might occur for those low in group identification. Future research should examine how individuals

emotionally react to primes that activate a negative aspect of a social identity.

Another future direction would be to move beyond the relatively subtle group priming manipulations used here, to truly subliminal priming techniques that would permit an even stronger argument that emotional responses are not just shallow reports of group emotion stereotypes. It is natural to assume that subliminal primes would have weaker effects than those demonstrated here, but on the other hand people may attempt to factor out or correct for the effects of primes that they can consciously perceive, potentially weakening their effects. Consistent with this idea, a meta-analysis of priming effects in person perception (DeCoster & Claypool, 2004) found that subliminal primes actually produced somewhat stronger effects compared to primes that were visibly and clearly presented to participants. Thus, it is possible that our results underestimate (rather than overestimate) the magnitude of effects that might be produced by subliminally presented primes in future studies of this sort.

Convergence to prototypical profiles of group-based emotions has a further implication, related to the role of social consensus in defining reality for us (Sherif, 1936). Opinions and attitudes that are shared with other ingroup members are generally perceived as being more valid – and are held with greater confidence – compared to judgments that lack such social consensus. Belief consensus leads to increased certainty, reduced anxiety, and motivated action tendencies (Kelley, 1973; Turner, 1991). In a similar way, emotional consensus may also shape emotional well-being and social action. If group-level emotions are indeed seen as more valid because they are consensually shared within the ingroup, then action tendencies that arise out of these emotions may seem more certain and legitimate than actions that arise from idiosyncratic, unshared individual emotions or thoughts. It is possible that an activated group identity could lead to feelings of certainty and legitimacy about group emotions and hence to especially strong action tendencies – just as individuals, when acting in groups, may behave more extremely than when acting alone (e.g., Johnson, Stemler, & Hunter, 1977). In other words, group-based emotions may have especially strong ties to action, if individuals draw on the informative value of social consensus as a guide to the validity of their emotions (cf. Kruglanski & Thompson, 1999).

Perhaps the most important implication of this work for future research is that we now know that group-level emotions can be activated by subtle priming, without explicitly asking people about group emotions. Therefore simple questions about what emotions are being felt cannot differentiate individual from group-level emotions. Future research should try to minimize this ambiguity, especially when asking about emotional responses to a potentially group-level phenomenon such as terrorist attacks or potential acts of discrimination. For example, following the lead of Smith et al. (2007), emotion researchers might separately ask “as an individual, how do you feel?” and “as a [group member], how do you feel?” Making this distinction is important given the differences in the nature and the consequences of individual and group-level emotions.

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³ In Study 2, an image of the World Trade Center (pre 9/11) was included as a prime. However, any effects of this individual prime cannot be determined.

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