


When Are Emotions Related to Group-Based Appraisals? A Comparison Between Group-Based Emotions and General Group Emotions

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Abstract

In the literature on emotions in intergroup relations, it is not always clear how exactly emotions are group-related. Here, we distinguish between emotions that involve appraisals of immediate group concerns (i.e., group-based emotions) and emotions that do not. Recently, general group emotions, measured by asking people how they feel “as a group member” but without specifying an object for these emotions, have been conceptualized as reflecting appraisals of group concerns. In contrast, we propose that general group emotions are best seen as emotions about belonging to a group. In two studies, general group emotions were closely related to emotions that are explicitly measured as belonging emotions. Two further studies showed that general group emotions were not related to appraisals of immediate group concerns, whereas group-based emotions were. We argue for more specificity regarding the group-level aspects of emotion that are tapped by emotion measures.

Keywords

group-based emotions, group-based appraisals, group concerns, group identification, group membership

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Over the past 15 years, a growing amount of work has been devoted to the role of emotions in the context of intergroup relations (for reviews, see Iyer & Leach, 2008; Yzerbyt & Demoulin, 2010). Emotions have been shown to be linked to a variety of intergroup attitudes as well as to important behaviors such as forgiveness, restitution, and collective action. Not surprisingly, because emotions are related to (inter)group processes in several ways, many different terms have been introduced in the literature (e.g., intergroup emotions, group-based emotions, and collective emotions). Unfortunately, different researchers seem to use various terms to refer to the same group-level aspects of emotion or even use the same terms to refer to different aspects. More conceptual clarity is needed. Our key goal here is to differentiate between different types of emotions in the context of intergroup relations. More specifically, we focus on the role of appraisals of group concerns and differentiate between emotions that involve such group-based appraisals (also called group-based emotions) as opposed to emotions that do not primarily result from appraisals of group concerns. We apply this distinction to existing measures of group-related emotions, most notably a measure of “general group emotions.”

How Are Emotions Group-Related?

Several criteria have been used for calling emotions group-related. One such characteristic is the *shared nature* of emotions. For Parkinson, Fischer, and Manstead (2005), “group emotions” are distinct from other emotions mainly because they are shared. E. R. Smith, Seger, and Mackie (2007) used the shared nature of emotions as one of four criteria to determine whether “group-level” emotions are different from individual emotions. Finally, shared emotions have also been studied in the context of workgroups in organizations (Barsade & Gibson, 1998).

The most widely used criterion, however, is whether emotional reactions are reactions to *group concerns* or reactions to *individual concerns*. The first full-fledged conceptualization

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of group-related emotions mentioned the possibility of “emotions triggered by events that are group relevant rather than merely personally relevant” (E. R. Smith, 1993, p. 302). In that seminal article, E. R. Smith (1993) combined appraisal theories (Scherer, Schorr, & Johnstone, 2001) with self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), bringing emotional appraisal to the group level. The key idea is that when social identity is salient, people evaluate or appraise the environment in light of group (rather than individual) concerns and this leads to group-based emotions (in contrast to individual emotions). This conceptualization of group-based appraisal builds on earlier theories about how people sometimes evaluate group concerns, such as the group position model (Blumer, 1958), group relative deprivation (Runciman, 1966), and social identity theory (Tajfel & Turner, 1986).

Early empirical work on emotions in intergroup relations also emphasized group-based appraisals. In a now classic effort to separate individual from group-based appraisals, Doosje, Branscombe, Spears, and Manstead (1998) investigated the emotional reaction to harmful events for which participants were not personally responsible, but their group was. Mackie, Devos, and Smith (2000) manipulated the alleged strength of the in-group and predicted that an appraisal of high or low in-group strength would lead to anger and fear, respectively. Finally, Gordijn, Wigboldus, and Yzerbyt (2001) assessed emotional reactions to an event that concerned other group members, but not the participants themselves. These and later studies all present situations in which individuals appraise the situation for what it means to their group’s concerns, rather than their personal concerns. The resulting emotions are therefore *emotions on behalf of the group*. Several researchers have used the term “group-based emotions” to refer to such emotions on behalf of the group (Bizman, Yinon, & Krotman, 2001; Iyer & Leach, 2008; E. R. Smith, 1999; H. J. Smith & Kessler, 2004; Yzerbyt & Demoulin, 2010; Yzerbyt, Dumont, Mathieu, Gordijn, & Wigboldus, 2006). More precise descriptions would be “emotional reactions to group concerns” or “emotions involving group-based appraisal,” but given the established nature of the term “group-based emotions,” it would be confusing to stop using it. We thus use “group-based emotions” to refer to emotional reactions to group concerns, that is, emotions that involve group-based appraisals.

Although appraisals of group concerns were central to founding theoretical and empirical work on group-based emotions, group-based appraisals are, in our opinion at least, underappreciated in the current literature. One sign of the less than central place of group-based appraisal is that two integrative models of emotion in intergroup relations do not even discuss group-based appraisal explicitly (Iyer & Leach, 2008; Parkinson et al., 2005). Another sign is that some recent research on group-related emotions has taken a turn away from group-based appraisals. As a case in point, “*general group emotions*” (E. R. Smith et al., 2007) are measured

by asking people to report the emotions that they experience as a group member, but without referring to any particular situation, event, or group characteristic. In one illustrative study, E. R. Smith et al. (2007) asked “As an Indiana University student, to what extent do you feel each of the following emotions?” Importantly, no context for these emotions was specified and therefore, no particular appraisals were made salient to participants.

The Nature of General Group Emotions

Given the lack of a relation with specific group-based appraisals, it is somewhat unclear in what way general group emotions are group-related. E. R. Smith and colleagues seem to argue that general group emotions are a summary of all group-based emotions, summing up all emotional reactions to group concerns that people experience on behalf of a particular group, and therefore being chronic rather than acute. General group emotions thus have a “broader focus” (E. R. Smith et al., 2007, p. 432), but there has been no reference to another process than group-based appraisal when it comes to their origin. In more recent articles (Leonard, Moons, Mackie, & Smith, 2011; Moons, Leonard, Mackie, & Smith, 2009; Seger, Smith, & Mackie, 2009), emotions measured in this way are simply called “group-based emotions,” which suggests an assumed link with group-based appraisals. Here, we investigate the nature of general group emotions, and how they are group-related. Importantly, we do not think that general group emotions result from immediate group-based appraisals but that they are better conceptualized as emotions about group belonging. By shedding light on the nature of general group emotions, we emphasize the role of group-based appraisal as a defining element of the group-related nature of emotions in intergroup relations.

An important element in our alternative conceptualization of general group emotions is their relation with identification. Negative general group emotions and negative group-based emotions have *opposite* correlations with identification (Iyer & Leach, 2008; E. R. Smith et al., 2007). Theorists have predicted a positive relation between group identification and negative group-based emotions, except for the case of group-critical emotions such as guilt and shame (for a review, see Iyer & Leach, 2008). There is evidence aplenty that identification is positively correlated with negative group-based emotions such as group-based anger (Gordijn, Yzerbyt, Wigboldus, & Dumont, 2006; Mackie et al., 2000; Mackie, Silver, & Smith, 2004; Musgrove & McGarty, 2008; Rydell et al., 2008; Yzerbyt, Dumont, Wigboldus, & Gordijn, 2003), group-based fear (Mackie et al., 2004), group-based *schadenfreude* (Combs, Powell, Schurtz, & Smith, 2009), group-based dejection (Petrocelli & Smith, 2005), and group-based tension and general negative affect (Wann, Dolan, McGeorge, & Allison, 1994). To our knowledge, no study has reported a *negative* correlation between identification and group-based

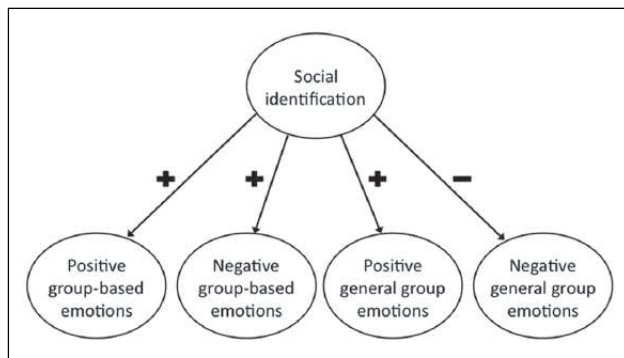


Figure 1. Inconsistency in the reported relations between identification and group-based emotions.

Note. This figure represents correlations that have been reported in the literature. For negative group-based emotions, we do not consider group-critical emotions such as shame or guilt. Crucially, general group emotions have been assumed to be a theoretical construct closely related to group-based emotions. The correlations for positive emotions are expected and unproblematic. For negative emotions, there is a clear difference between group-based emotions and general group emotions. In both cases, the sign reflects the results from multiple studies and multiple emotions.

emotions (except for group-critical emotions, see Doosje et al., 1998). In contrast, E. R. Smith and colleagues found negative relations between identification and general group emotions such as “afraid,” “uneasy,” and “irritated.” In other words, two constructs that are seen as theoretically similar show opposite correlations with a third variable (see Figure 1).

This suggests that there is an important difference between group-based emotions and general group emotions that has not received attention yet. We propose here that general group emotions actually reflect how individuals feel about their being a member of a group. In other words, general group emotions may not in fact measure emotions that people feel *on behalf of* the group (i.e., group-based emotions based on group-based appraisals) but rather emotions that people feel *about* belonging to the group. Emotions *about* group membership do not directly involve group-based appraisal because they are not a reaction to immediate group concerns. Rather, they reflect how an individual feels about the fact that she or he belongs to a specific group, for example, to be happy about being a student. Such feelings might depend on many factors. For example, people could be proud to belong to a group if others view their group as prestigious. In other words, widely held stereotypes regarding the group are likely associated with emotions about group membership. There could be also ways in which emotions about group membership are related to emotions on behalf of the group. For instance, it is easy to imagine that one would be happier to belong to a group when the emotions experienced on behalf of the group are generally positive rather than negative. However, the critical issue here is the prominent role of immediate group-based appraisals in shaping group-based emotions, that is, emotions on behalf of the group, but not general group emotions, that is, emotions about group membership.

Predictions and Overview of the Studies

Our alternative conceptualization of general group emotions leads us to make several predictions that we tested in a series of four studies. First, if general group emotions reflect how people feel about belonging to their group, positive emotions should be positively related to identification and negative emotions should be negatively related to identification (Studies 1-4). In contrast, we would not expect such a pattern to emerge for (negative) group-based emotions (Studies 3-4).

Our second prediction was that these relations between identification and emotions should be stronger when using an identification measure that is conceptually closer to emotions felt about belonging to the group. Social identification is often treated as a multicomponential construct (see Leach et al., 2008). An affective dimension of group identification consists of positive feelings about group membership. Clearly, this is conceptually closer to emotions felt about belonging to a group than cognitive aspects of group identification such as self-categorization or centrality. We therefore expect a stronger relation of general group emotions with affective identification than with other identification dimensions (Studies 1-4). Again, because group-based emotions are rooted in people’s reactions to group concerns, they should be much less related to the affective dimension of group identification (Studies 3-4).

As to our third prediction, we reasoned that if general group emotions reflect how individuals feel about their belonging to a group, the relations between identification and emotions should show a similar pattern when we explicitly ask for people’s emotions *about their belonging* to a group (for the sake of clarity, we call these “belonging emotions,” Studies 1-2). The difference between affective identification and belonging emotions is that identification assesses general positive feelings about group membership whereas belonging emotions assess many different emotional reactions, both positive and negative. Conceptually, however, we think affective identification, belonging emotions, and general group emotions are very similar.

Last but not the least, Studies 3 and 4 addressed the issue of the link between group-based versus general group emotions and group-based appraisals. Specifically, we predicted that group-based emotions (but not general group emotions) would be rooted in group-based appraisals.

Studies 1 and 2 built on the existing research on general group emotions (Seger et al., 2009; E. R. Smith et al., 2007). We assessed individual and general group emotions exactly as in previous studies, but added a series of measures that were critical to test our hypotheses. First, we included a multidimensional identification measure that allowed us to distinguish the affective component of social identification from other components. Second, we measured “belonging emotions,” that is, emotions that people feel about the fact that they belong to a group.

Study 1

Study 1 was a first test of our hypotheses regarding the nature of general group emotions. We measured general group emotions, four identification components, and belonging emotions. Our reasoning that general group emotions are not emotions *on behalf of* the group but emotions *about* group membership led to three hypotheses. The first hypothesis was that the relation between identification and general group emotions should be moderated by valence. Specifically, we predicted positive and negative emotions to be positively and negatively correlated with identification, respectively. Our second hypothesis was that this relation between emotions and identification should be stronger for an affective dimension of identification. Finally, our third hypothesis was that this relation would be similar when measuring belonging emotions instead of general group emotions.

Method

We had access to a sample of students at the Université catholique de Louvain (UCL) who were waiting for feedback during a lecture, and administered as many questionnaires as we could. In all, 32 students (24 female, 7 male, 1 unknown, age $M = 19.35$) reported the intensity with which they felt 14 emotions as an individual (individual emotions), as a UCL student (general group emotions), and about their belonging to the group of UCL students (belonging emotions). Participants first reported individual emotions, so these would not be influenced by any earlier mention of the UCL students group. They then indicated their identification with UCL students and reported their general group emotions and finally their belonging emotions.

Emotions. We included seven positive (hope, joy, satisfaction, enthusiasm, pride, amusement, gratefulness) and seven negative (irritation, anxiety, disappointment, anger, sadness, worry, disgust) emotions. We deliberately excluded self-critical emotions such as guilt and shame because research has shown that these emotions have a different relation with identification than other emotions. For *individual emotions*, we asked participants “As an individual, to what extent do you feel the following emotions.” *General group emotions* were measured by asking “As a UCL student, to what extent do you feel the following emotions.” This wording is identical to that used in previous research on general group emotions (Seger et al., 2009; E. R. Smith et al., 2007). *Belonging emotions* were measured by asking participants “As a UCL student, to what extent do you feel the following emotions about your belonging to the group of UCL students.” All emotions were measured on a 9-point scale going from 1 (*not at all*) to 9 (*a lot*).

Identification. We measured group identification using an integrative and well-validated multidimensional scale (Leach et al., 2008). We included the satisfaction (four items, for example, “I am glad to be a UCL student,” $\alpha = .87$), solidarity

(three items, for example, “I feel a bond with UCL students,” $\alpha = .88$), centrality (two items, for example, “Being a UCL student is an important part of how I see myself,” $\alpha = .70$),¹ and individual self-stereotyping (two items, for example, “I am similar to the average UCL student,” $\alpha = .95$) subscales. Some analyses below also use the overall identification scale (11 items, $\alpha = .93$). Items were measured on a 9-point scale going from 1 (*disagree completely*) to 9 (*agree completely*).

Results and Discussion

We turned to multilevel modeling to deal with these data. We used SAS PROC MIXED and restricted maximum likelihood estimation. We relied on the Kenward–Roger procedure to calculate the degrees of freedom associated with each parameter.

The first and second hypotheses concerned the relation between identification and positive versus negative emotions. We tested both hypotheses in the same model, with general group emotions as the dependent variable and the individual emotions, the four identification scales (satisfaction, solidarity, centrality, and self-stereotyping), valence (coded 1 for positive and -1 for negative emotions), and the interaction of valence with the five other predictors (see Model 1 in Table 1) as independent variables. The random part of our model included a random intercept (which serves as a random subjects effect), a random effect for valence (which tests whether the effect of valence differs between participants), and a covariance between these two. We also included a random effect of emotion. All continuous variables were grand mean centered.² This is the equation for this analysis:

Level 1 model:

$$\begin{aligned} \text{GGE}_{ij} = & B_{0ij} + B_1(\text{INDEMO}_{ij}) + B_{2j}(\text{VAL}_i) \\ & + B_3(\text{INDEMO}_{ij} \times \text{VAL}_i) + e_{ij}. \end{aligned}$$

Level 2 model:

$$\begin{aligned} B_{0ij} = & G_{00} + G_{01}(\text{SAT}_j) + G_{02}(\text{SOL}_j) + G_{03}(\text{CENT}_j) \\ & + G_{04}(\text{SELF}_j) + u_{0i} + u_{0j}. \end{aligned}$$

$$B_1 = G_{10}.$$

$$\begin{aligned} B_{2j} = & G_{20} + G_{21}(\text{SAT}_j) + G_{22}(\text{SOL}_j) + G_{23}(\text{CENT}_j) \\ & + G_{24}(\text{SELF}_j) + u_{2j}. \end{aligned}$$

$$B_3 = G_{30},$$

where there are i emotions and j individuals. GGE is the general group emotion, INDEMO is the individual emotion, SAT is satisfaction, SOL is solidarity, CENT is centrality, SELF is individual self-stereotyping, and VAL is valence. Also, e is a Level 1 error term and u is a Level 2 error term; or, more specifically, u_{0i} is the residual associated with each

Table 1. The Relation Between Different Identification Dimensions and Emotions (Study 1).

Dependent variable	Model 1	Model 2
	General group emotions	Belonging emotions
Fixed part		
Intercept (G_{00})	5.07***	4.54***
Satisfaction (G_{01})	-0.11	-0.33
Solidarity (G_{02})	0.08	0.29
Centrality (G_{03})	-0.01	0.07
Self-stereotyping (G_{04})	0.05	0.01
Individual emotion (G_{10})	0.37***	0.27***
Valence (G_{20})	0.68**	0.86***
Satisfaction × Valence (G_{21})	0.44***	0.62***
Solidarity × Valence (G_{22})	-0.02	-0.04
Centrality × Valence (G_{23})	-0.01	0.14
Self-stereotyping × Valence (G_{24})	0.02	0.02
Individual emotion × Valence (G_{30})	-0.07	0.02
Random part		
Level 2 (Individual) variance ($\sigma^2_{u0(i)}$)	0.23**	0.74***
Level 2 Individual-Valence covariance ($\sigma_{u02(i)}$)	-0.24**	-0.19
Level 2 Valence (Individual) variance ($\sigma^2_{u2(i)}$)	0.22**	0.33**
Level 2 (Emotion) variance ($\sigma^2_{u0(i)}$)	0.53*	0.31*
Level 1 variance ($\sigma^2_{e_{ij}}$)	1.61***	1.35***

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

emotion, u_{0j} is the residual associated with each individual, u_{2j} is the residual for the effect of valence associated with each individual, and e_{ij} is the Level 1 residual. Finally, u_{0i} , u_{0j} , and u_{2j} have variances of $\sigma^2_{u0(i)}$, $\sigma^2_{u0(j)}$, and $\sigma^2_{u2(j)}$, respectively, and u_{0j} and u_{2j} have a covariance of $\sigma_{u02(j)}$.

Supporting both Hypotheses 1 and 2, there was an interaction between valence and satisfaction, $B = .44$, 95% confidence interval (CI) = [0.22, 0.67], (see Model 1 in Table 1). Decomposing this interaction by valence showed that satisfaction had a positive relation with positive emotions, $B = .33$, $p < .001$, and a negative relation with negative emotions, $-B = .56$, $p < .01$. The interactions between valence and solidarity, valence and centrality, and valence and self-stereotyping were all close to zero, suggesting that only the affective dimension of identification was related to general group emotions. In models where only one identification measure was used at a time, all showed significant interactions with valence, but once we controlled for satisfaction, those relations disappeared and only the interaction with satisfaction remained significant. This means that the relation between identification and general group emotions is driven solely by the affective dimension. These results lend support to our assertion that general group emotions tap the affective dimension of belonging to the group.

Hypothesis 3 predicted that the valence by identification interaction would be similar for belonging emotions and for general group emotions. To test this, we fitted the exact same model as before, but now with belonging emotions as the dependent variable (Model 2 in Table 1). As expected, the

key satisfaction by valence interaction was significant, $B = .62$, 95% CI = [0.37, 0.87], and no other identification scale interacted with valence. Decomposing the satisfaction by valence interaction for belonging emotions confirmed that satisfaction had a positive relation with positive emotions, $B = .29$, $p = .08$,³ and a negative relation with negative emotions, $B = -.95$, $p < .001$. Thus, emotions that are explicitly measured as belonging emotions have a structurally similar relation with social identification as general group emotions. As a further indication of their conceptual similarity, belonging emotions also correlated strongly with general group emotions, $r = .70$, $p < .001$.

Although these results were entirely in line with our predictions, our study had some methodological limitations. First, we did not counterbalance our measures of general group emotions and belonging emotions. Second, we only had 32 participants. Third, our measure of belonging emotions was worded very similarly to our measure of general group emotions, which could have artificially increased their similarity. We conducted a second study to address these shortcomings.

Study 2

Study 2 was identical to Study 1, except that we counterbalanced the measures of general group emotions and belonging emotions, and changed the wording of the measure of belonging emotions. We again expected general group emotions and belonging emotions to be predicted by an interaction between emotion valence and affective identification.

Table 2. The Relation Between Different Identification Dimensions and Emotions (Study 2).

Dependent variable	Model 3	Model 4
	General group emotions	Belonging emotions
Fixed part		
Intercept (G_{00})	4.87***	4.56***
Satisfaction (G_{01})	0.22**	0.15
Solidarity (G_{02})	0.15*	0.14
Centrality (G_{03})	-0.05	-0.12*
Self-stereotyping (G_{04})	-0.03	0.14*
Individual emotion (G_{10})	0.36***	0.30***
Valence (G_{20})	1.01**	1.20***
Satisfaction × Valence (G_{21})	0.34***	0.30**
Solidarity × Valence (G_{22})	-0.02	0.05
Centrality × Valence (G_{23})	-0.01	-0.02
Self-stereotyping × Valence (G_{24})	0.08	0.12*
Individual emotion × Valence (G_{30})	-0.02	-0.03
Random part		
Level 2 (Individual) variance ($\sigma^2_{u0(i)}$)	0.21***	0.50***
Level 2 Individual-Valence covariance ($\sigma_{u02(i)}$)	-0.21***	-0.09
Level 2 Valence (Individual) variance ($\sigma^2_{u2(i)}$)	0.34***	0.49***
Level 2 (Emotion) variance ($\sigma^2_{u0(i)}$)	0.59**	0.21*
Level 1 variance (σ^2_{ej})	1.64***	1.63***

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

Method

We wanted a larger sample size than in Study 1 and to have at least 100 participants. During several lectures at the UCL, we asked students to fill out a paper questionnaire and we stopped visiting lectures when we had data for more than 100 participants. In all, 113 students (94 female, 18 male, 1 unknown, age $M = 20.82$) reported the intensity with which they felt 14 emotions as an individual (individual emotions), as a UCL student (general group emotions), and about their belonging to the group of UCL students (belonging emotions). Participants first reported individual emotions. They then filled in an identification scale about their identification with UCL students. General and belonging emotions were counterbalanced.

Emotions. We measured the same 14 emotions as in Study 1. Individual emotions and general group emotions were measured as in Study 1. The wording for belonging emotions was changed into "To what extent do you feel the following emotions about your belonging to the group of UCL students?" This made the question wording for general group emotions and belonging emotions more different from each other than was the case in Study 1.

Identification. We used the same items as in Study 1 for the satisfaction ($\alpha = .77$), solidarity ($\alpha = .80$), centrality ($\alpha = .85$), and self-stereotyping ($\alpha = .89$) subscales.

Results and Discussion

As in Study 1, we hypothesized that the relation between general group emotions and identification should be stronger for the affective dimension of identification. We again used multilevel modeling and first tested a model with general group emotions as the dependent variable and the individual emotions, the four identification scales (satisfaction, solidarity, centrality, and self-stereotyping), valence, and the interaction of valence with the five other predictors as independent variables.⁴ As can be seen in Table 2 (Model 3), the results for general group emotions were similar to those of Study 1. There was an interaction between valence and satisfaction, $B = .34$, 95% CI = [0.17, 0.50]. Decomposing this interaction showed that satisfaction had a positive relation with positive emotions, $B = .56$, $p < .001$, and a negative but non-significant relation with negative emotions, $B = -.11$, $p = .41$.⁵ Unexpectedly, there were positive main effects of satisfaction and solidarity. However, these are not that surprising, as the positive correlations of identification with positive emotions are much stronger than the negative correlations with negative emotions, both in our studies and in E. R. Smith et al. (2007). In fact, if Model 3 is run with the four identification subscales separately, the identification subscale main effects are positive (all $ps < .01$) and there always is a positive valence by identification subscale interaction (all $ps < .001$). However, when all identification subscales are in the model, only the satisfaction by valence interaction remains

significant, showing it is satisfaction that drives the effect. E. R. Smith and colleagues (2007) also included one affective identification item. We re-analyzed their data separating this item from the three other identification items and found that, for three of the four groups that they considered, the valence by affective identification interaction was significant, and significantly larger than the valence by non-affective identification interaction (which was never significant).

As in Study 1, we predicted similar relations between identification and belonging emotions. General group emotions and belonging emotions were again strongly correlated, $r = .77$, $p < .001$. The relations with the identification subscales were also very similar (compare Model 4 with Model 3 in Table 2). The satisfaction by valence interaction was again significant, $B = .30$, 95% CI = [0.11, 0.49]. Decomposing this interaction by valence showed that satisfaction had a positive relation with positive emotions, $B = .44$, $p < .001$, and a negative but non-significant relation with negative emotions, $B = -.15$, $p = .30$.⁶ This time, the self-stereotyping by valence interaction also reached significance. Decomposing this interaction showed that self-stereotyping had a positive relation with positive emotions, $B = .26$, $p < .01$, and a non-significant relation with negative emotions, $B = .03$, $p = .78$. Unlike satisfaction, self-stereotyping had no significant bivariate correlation with negative belonging emotions, $r = -.04$, $p = .29$. Satisfaction was thus again the only identification subscale that showed the expected pattern of relations with both general group emotions and belonging emotions. As was the case for general group emotions, there were also identification main effects for belonging emotions. Self-stereotyping had a positive and centrality a negative main effect. The negative centrality main effect is unexpected but it is a mere consequence of correlations between the identification scales. If the analysis is done with each identification scale separately, they all have positive main effects (all $ps < .001$ except for centrality $p = .10$) and a positive interaction with valence (all $ps < .001$).

Given that general group emotions are closely related to belonging emotions, and that both are predicted by an interaction between affective identification and valence, one can wonder whether all three measure similar concepts. Some insight in this regard can be obtained with a factor analysis of all items of general group emotions, belonging emotions, and affective identification. We performed such an analysis on the combined data of Studies 1 and 2. Using the reduced correlation matrix, the first five eigenvalues were 10.4, 6.0, 1.7, 1.5, and 1.4, which suggests a two-factor solution. A parallel analysis (O'Connor, 2000) also suggested a two-factor solution. After an oblique (direct oblimin) rotation, all positive emotions and the identification items loaded on the first factor (.47-.83), and all negative emotions loaded on the second factor (.53-.82). The two factors were negatively correlated (factor correlation was $-.18$ when delta was set to 0 and $-.62$ when delta was set at its maximum value of 0.8). It seems that the positive-negative distinction is the only important dimension in these data and that otherwise general

group emotions, belonging emotions, and affective identification all measure the same underlying construct. We indeed think that the measure of general group emotions actually measures belonging emotions and that this concept is difficult to distinguish from affective group identification.

We have now shown that general group emotions are very closely related to emotions about belonging to a group, that is, an affective dimension of identification. This is at odds with the conceptualization of general group emotions as (a summary of) group-based emotions. However, we have not yet presented any direct evidence that general group emotions are different from group-based emotions. This was the aim of Studies 3 and 4. Group-based emotions are emotional reactions to specific group-relevant events and involve group-based appraisals, whereas general group emotions are measured without referring to any specific event or situation. In Studies 3 and 4, we measured group-based emotions by referring to a specific intergroup relation and after making salient critical group-based appraisals.

Study 3

The key ambition of Study 3 was to examine the differences between group-based and general group emotions. Our main predictions focused on the relations between identification and group-based appraisals on one hand, and group-based emotions and general group emotions, on the other. In line with our rationale about the nature of group-based emotions, we expected group-based appraisals to be related to group-based emotions, but not to general group emotions.

We also expected that negative general group emotions would correlate negatively with identification, but that there would be a positive or no correlation between negative group-based emotions and identification. The latter prediction was based on the fact that we are not aware of any published research that has reported negative correlations between negative group-based emotions and identification (except for group-critical emotions). In contrast, studies have reported either positive or non-significant correlations (see Iyer & Leach, 2008).

A third and final prediction focuses on the role of satisfaction, an affective dimension and subscale of identification. One piece of empirical support for our reasoning that general group emotions and group-based emotions are different is the interaction between emotion valence and satisfaction that we found in Studies 1 and 2. In Study 3, we predicted that we should replicate the valence by affective identification interaction for general group emotions but that this interaction should be smaller for group-based emotions.

Method

We wanted to have at least 100 participants but collected as many data as we could with the psychology participant pool at Cardiff University. In all, 132 students (121 female,

median age = 19) at Cardiff University filled in an online questionnaire in return for partial course credit. One participant answered “agree strongly” to the statement “I am an elephant and live in Africa” and another one did not answer the question. Both were excluded from all analyses.

Group-based appraisals and group-based emotions. To instigate group-based emotions, we decided to focus the attention of our participants (Cardiff University students) on the relation between themselves and people from the (prestigious) universities of Oxford and Cambridge. Importantly, we measured critical appraisals about the intergroup relation *before* measuring group-based emotions. A first introductory text read as follows:

Universities sometimes differ in the kind of people they attract. We are interested in your general impression of people from other universities. In particular, we will ask you a few questions about people who study or work at the University of Oxford and the University of Cambridge. Please think about how people at the University of Oxford and the University of Cambridge are different from people at Cardiff University.

After this text, two items measured the perceived relative performance of Cardiff versus Oxford/Cambridge University: “In general, the level of education/research is better at Oxford and Cambridge than at Cardiff University.” On the same page as the appraisals, we also measured stereotypes about people from Oxford and Cambridge: “In general, people from Oxford and Cambridge University more arrogant/conceited/competent/friendlier than those from Cardiff University.”

We measured emotions that we thought could be relevant to the specific intergroup relation that we made salient and we explicitly included the object of the emotion in each separate emotion item. We chose admiration/respect for people from Oxford and Cambridge, angry/irritated toward people from Oxford and Cambridge, anxious/uneasy about people from Oxford and Cambridge, and pleased/satisfied with the relations between Cardiff University and Oxford/Cambridge University. The introductory question read as follows: “As a Cardiff University student, to what extent do you feel the following emotions in relation to people from Oxford and Cambridge University?” All emotions were measured on 7-point scales going from 0 (*not at all*) to 6 (*extremely*).

Identification and general group emotions. We used the same identification scale as in Studies 1 and 2 with two changes. First, we not only measured satisfaction ($\alpha = .88$), solidarity ($\alpha = .85$), centrality ($\alpha = .79$), and self-stereotyping ($\alpha = .90$) subscales but also included the in-group homogeneity subscale ($\alpha = .83$). Second, we used 7-point rather than the 9-point rating scales we used in Studies 1 and 2. General group emotions were measured in the same way as before, but this time only using the eight emotions that were also considered for group-based emotions. We no longer measured individual emotions because we did not need them to

test our hypotheses. The order of general group emotions and group-based emotions was counterbalanced. Identification was either assessed before or after both emotion measures.

Results and Discussion

The role of group-based appraisals. Our first prediction focused on the relation between group-based appraisals and emotions. For this analysis, we looked at discrete emotions rather than at a series of positive or negative emotion words, as this fits better with appraisal theory’s emphasis on how a specific combination of appraisals leads to discrete emotions. Specifically, we combined the ratings for group-based emotions and general group emotions into measures of admiration (admiration, respect, $\alpha = .79$ and $.78$), satisfaction (satisfied, pleased, $\alpha = .87$ and $.92$), anger (angry, irritated, $\alpha = .82$ and $.86$), and anxiety (anxious, uneasy, $\alpha = .84$ and $.82$). For each of these four pairs of general group emotions and group-based emotions, we conducted a repeated-measures ANOVA with emotion type (general group emotion vs. group-based emotion) as a within-subject factor, emotion order (general group emotions first vs. group-based emotions first) as a between-subjects factor, and the perceived performance of Oxford/Cambridge compared with Cardiff University as a covariate. We estimated a model including all interactions between factors and covariates.

For admiration, the only significant effect was an interaction between the perceived superiority of Oxford/Cambridge and emotion type, $F(1, 125) = 14.51, p < .001, \eta_p^2 = .10$. In line with predictions, whereas there was no correlation between perceived superiority of Oxford/Cambridge and general group admiration ($r = -.10, p = .25, 95\% \text{ CI}^7 = [-0.29, 0.08]$), group-based admiration was positively related to perceived superiority of Oxford/Cambridge ($r = .27, p = .002, 95\% \text{ CI} = [0.12, 0.44]$). For satisfaction, there were no main or interaction effects of perceived superiority.

Three-way interactions between perceived superiority, emotion type, and emotion order emerged for anger, $F(1, 126) = 6.45, p = .01, \eta_p^2 = .05$, and anxiety, $F(1, 126) = 3.75, p = .056, \eta_p^2 = .03$. Two-way interactions between perceived superiority and emotion type were more in line with our hypotheses when general group emotions were measured first, $F(1, 60) = 3.88, p = .053, \eta_p^2 = .06$ and $F(1, 60) = 5.35, p = .02, \eta_p^2 = .08$, than when group-based emotions were measured first, $F(1, 66) = 2.45, p = .12, \eta_p^2 = .04$ and $F(1, 66) = .20, p = .66, \eta_p^2 = .00$. When general group emotions were measured first, perceived superiority correlated positively with group-based anger, $r = .22$, and anxiety, $r = .17$, but negatively with general group anger, $r = -.10$, and anxiety, $r = -.21$, although none of these correlations were statistically significant. The clearer differentiation between general group emotions and group-based emotions when general group emotions are measured before rather than after group-based emotions could be due to the fact that the mentioning of group-based appraisals and group-based emotions

Table 3. The Relation Between Identification and Negative Emotions (Study 3).

Fixed part	
Intercept	1.231***
Identification	-0.131
Emotion type	-0.181**
Emotion order	0.229
Identification order	0.136
Identification × Emotion type	0.189**
Identification × Emotion order	0.034
Identification × Identification order	-0.267
Emotion type × Emotion order	-0.249*
Emotion type × Identification order	-0.209
Emotion order × Identification order	0.255
Identification × Emotion type × Emotion order	0.225
Identification × Emotion type × Identification order	0.187
Identification × Emotion order × Identification order	-0.372
Emotion type × Emotion order × Identification order	-0.287
Four-way interaction	-0.064
Random part	
Level 2 (Individual) variance	0.623***
Level 2 (Individual) emotion type variance	0.382***
Level 2 (Individual) emotion (i.e., anger vs. anxiety) variance	0.160***
Level 2 (Emotion × Emotion type) variance	0.087***
Level 1 variance	0.623***

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

influences or contaminates the more vaguely worded general group emotion questions (“As a Cardiff University student, to what extent do you feel . . .”). We look at these order effects again in Study 4.

Identification and negative emotions. Our second prediction focused on the relation between identification and negative emotions. We fitted a multilevel model in which ratings of negative emotions (both general group emotion and group-based emotion) were the Level 1 units and participants and emotions were the cross-classified Level 2 units. There were four negative emotions; so in total, there were eight data points per participant. Predictor variables were identification (grand mean centered), emotion type (general group emotion vs. group-based emotion), emotion order (general group emotions first vs. group-based emotions first), and identification order (whether the identification scale was administered before or after the emotions). We estimated a full model with all interactions between these four predictors.

As predicted, the interaction between identification and emotion type was significant, $B = .19, p < .01, 95\% \text{ CI} = [0.06, 0.32]$ (see Table 3). Simple effects indicated that general group emotions had a negative relation with identification, $B = -.32, p < .01$, replicating the negative relation reported by E. R. Smith and colleagues (2007). However, and in line with our hypothesis, group-based emotions were unrelated with identification, $B = .06, p = .60$. This confirms that negative general group emotions have a different relation with identification than group-based emotions do (see Figure 1).

Table 4. The Relation Between Different Identification Dimensions and Emotions (Study 3).

Fixed part	
Intercept	2.397***
Valence	1.166***
Emotion type	-0.222*
Satisfaction	0.031
Solidarity	0.078
Centrality	-0.004
In-group homogeneity	0.090*
Individual self-stereotyping	-0.051
Valence × Satisfaction	0.193*
Valence × Solidarity	0.102
Valence × Centrality	-0.086
Valence × In-group homogeneity	0.000
Valence × Individual self-stereotyping	0.081
Emotion type × Valence	-0.044
Emotion type × Satisfaction	0.059
Emotion type × Solidarity	-0.127**
Emotion type × Centrality	-0.025
Emotion type × In-group homogeneity	0.060
Emotion type × Individual self-stereotyping	0.042
Emotion type × Valence × Satisfaction	-0.088*
Emotion type × Valence × Solidarity	-0.124***
Emotion type × Valence × Centrality	0.032
Emotion type × Valence × In-group homogeneity	0.005
Emotion type × Valence × Individual self-stereotyping	-0.032
Random part	
Level 2 (Individual) variance	0.243***
Level 2 (Individual) emotion type variance	0.110***
Level 2 (Individual) valence variance	0.272***
Level 2 (Emotion × Emotion type) variance	0.119***
Level 1 variance	0.946***

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

Affective identification and general group emotions. A third prediction concerned the role of the “satisfaction” identification subscale. In Studies 1 and 2, general group emotions were predicted by an interaction between identification and emotion valence. This interaction was driven by “satisfaction,” an affective dimension of identification. We interpreted this as evidence that general group emotions are in fact emotions *about* belonging to the group rather than emotions *on behalf of* the group (i.e., based on group-based appraisals). If our reasoning is correct, we should replicate the interaction between satisfaction and emotion valence for general group emotions, but not for group-based emotions.

In line with our prediction, the satisfaction by valence interaction was significantly weaker for group-based emotions than for general group emotions, $B = -.09, p = .02, 95\% \text{ CI} = [-0.16, -0.01]$, in a multilevel model where general group emotions and group-based emotions were predicted by emotion type, the five identification subscales, emotion valence, and interactions between valence, identification, and emotion type (see Table 4). Simple effects showed that the satisfaction by valence interaction was significant for general group emotions, $B = .28, p < .01$, but not for group-based

emotions, $B = .11$, $p = .28$. For group-based emotions, the only effect of identification was a main effect of in-group homogeneity, $B = .15$, $p < .01$. This pattern means that the superficial semantic relation between *emotions* on one hand and an *affective* dimension of identification on the other hand does not necessarily lead to a stronger relation between the two (compared with other identification dimensions). We have argued that the special relation between satisfaction and general group emotions is due to the conceptual overlap between satisfaction and emotions about group belonging. The fact that our data fail to show this special relation in the case of group-based emotions supports our conceptual explanation rather than an explanation based on the superficial similarity between an “affective” dimension of identification and all emotions. Along similar lines, Leach and colleagues (2008) found that group-based guilt and shame correlated most strongly with the individual self-stereotyping subscale, again showing that the relation between identification and emotions is not necessarily driven by the affective dimension of identification.

Although Study 3 showed several predicted differences between general group emotions and group-based emotions, we wanted to boost our confidence in the message and replicate these results in a different context.

Study 4

We sought to replicate the results of Study 3, but this time, we chose the context for the group-based emotions in such a way that only group, and not individual, concerns were relevant. This makes sure that emotional reactions are group-based, rather than individual.

Method

A power analysis based on the interaction between appraisal and emotion type in Study 3 indicated that we needed 115 participants to achieve a power of .95. We aimed for 150 participants because we thought data collection would be effortless but when it proved slower than expected, we stopped when we reached 120. In all, 120 Belgian participants (93 female, median age = 22) completed an online questionnaire. They were recruited via a Facebook group set up by researchers at the Department of Psychology at the UCL at Louvain-la-Neuve. Participants were promised a 1 in 50 chance of winning €50 (about US\$67).

Group-based appraisals and group-based emotions. To elicit group-based emotions, we focused on the relation between French-speaking and Dutch-speaking Belgians. In recent years, there have been a series of political crises about the right of French-speaking people living in Flanders (the Dutch-speaking region) to use French in their dealings with the administrative and judicial authorities. Flemish nationalists resent Francophones who live in Flanders and accuse

them of not wanting to speak Dutch. An introductory text read as follows:

The situation of francophone Belgians living in Flanders is not always easy. In some municipalities Francophones are discriminated, for example when they want to buy a house. Even Francophones who speak Dutch well often have a francophone accent and will face discrimination by certain Dutch-speaking people. This means that they have difficulties integrating, making Dutch-speaking friends, and building a social network. These things are important in order to be happy where one lives and, more critically, to have access to the labor market and find a job.

Our participants were French-speaking and did not live in Flanders, so they were only concerned by this problem because they were Belgian Francophones, just as the victims.

After this text, we assessed group-based appraisals. Three items measured the *unfairness* of the treatment of Francophones in Flanders (e.g., “The Flemish treat Francophones living in Flanders unfairly,” “The Flemish discriminate against Francophones living in Flanders,” $\alpha = .79$). Two items measured the *agency* of the Flemish, that is, whether discrimination was a deliberate strategy (“As a consequence of Flemish nationalism, the Flemish deliberately target Francophones” and “The Flemish have a worked-out strategy to make life difficult for Francophones in Flanders,” $\alpha = .71$). Two filler items were added to avoid having uniformly negative items (e.g., “Among the Flemish, as in any other group, there are nice people and annoying people”). These items were answered on a 7-point scale from -3 (*strongly disagree*) to $+3$ (*completely agree*).

We measured emotions that we thought could be relevant to the specific intergroup relation that we made salient and we explicitly included the object of the emotion in each separate emotion item. We chose “angry/irritated about the treatment of Francophones in Flanders” and “anxious/worried because of the treatment of Francophones in Flanders.” We also added the same positive emotions as in Study 3: “I admire/respect the Flemish,” and “I am satisfied/pleased with the relation between the Flemish and Francophones in Flanders.” The introductory text to these questions read as follows: “To what extent do you feel the following emotions?” All emotions were measured on 11-point scales going from 0 (*not at all*) to 10 (*extremely*), and participants used a slider (whose initial position was at 0) to indicate their response.

Identification and general group emotions. We used the same identification scale as in Study 3, including satisfaction ($\alpha = .87$), solidarity ($\alpha = .85$), centrality ($\alpha = .80$), self-stereotyping ($\alpha = .88$), and in-group homogeneity ($\alpha = .79$) subscales. General group emotions were measured as in Study 3, with the only differences that “uneasy” was replaced with “worried” and the same 11-point slider measure was used as for group-based emotions. The order of general group emotions and

group-based emotions was counterbalanced. Identification was either assessed before or after both emotion measures.

Behavioral intentions. We asked participants to what extent they would like to behave in specific ways. Two items measured intentions to avoid the Flemish (“Avoid the Flemish,” “Keep my distance from the Flemish,” $\alpha = .89$). We also included four items to measure people’s intentions to confront or move against the Flemish (“Confront the Flemish,” “Impose my opinion on the Flemish,” “Treat the Flemish living in Wallonia like the Flemish treat the Francophones in Flanders,” and “Make life difficult for the Flemish living in Brussels or Wallonia”) and two more positive behavioral intentions (“Improve the relations between Flemish and Francophones” and “Make friends among the Flemish”). All items had a 7-point response scale going from 0 (*not at all*) to 6 (*extremely*). No reliable scale could be formed by any of these items and we therefore use them as separate items in the analyses.

Results and Discussion

Four participants lived in Flanders, and a further four had lived in Flanders before. These participants could have been personally concerned by the treatment of French-speaking people in Flanders, and were therefore excluded from analyses (112 remained).

The role of group-based appraisals. Our analyses follow the same structure as in Study 3. First, we combined the ratings for group-based emotions and general group emotions into measures of satisfaction (satisfied, pleased, $\alpha = .87$ and $.63$), anger (angry, irritated, $\alpha = .82$ and $.80$), and anxiety (anxious, worried, $\alpha = .75$ and $.85$). Respect and admiration did not correlate highly (.36 and .23) and mean ratings for respect were much higher than those for admiration, suggesting that in this study, these emotions measured something different. We therefore analyzed respect and admiration separately. For each of these five (pairs of) general group emotions and group-based emotions, we conducted a repeated-measures ANOVA with emotion type (general group emotion vs. group-based emotion) as a within-subject factor, emotion order (general group emotions first vs. group-based emotions first) as a between-subjects factor, and unfairness as a covariate. We estimated models including all interactions between factors and covariate. We also explored models that included agency as an additional predictor, but agency had no main or interaction effects and was therefore excluded from all models.

The predicted interaction between the unfairness appraisal and emotion type was significant for anger, $F(1, 105) = 16.36$, $p < .001$, $\eta_p^2 = .13$; satisfaction, $F(1, 105) = 11.48$, $p < .001$, $\eta_p^2 = .10$; and respect, $F(1, 108) = 4.30$, $p = .04$, $\eta_p^2 = .04$. For group-based emotions, unfairness was associated with more anger ($r = .63$, $p < .001$, 95% CI = [0.50, 0.73]), less

satisfaction ($r = -.42$, $p < .001$, 95% CI = [-0.25, -0.57]), and less respect ($r = -.38$, $p < .001$, 95% CI = [-0.21, -0.54]). For general group emotions, the correlations with anger ($r = .20$, $p = .04$, 95% CI = [-0.02, 0.41]), satisfaction ($r = -.04$, $p = .65$, 95% CI = [-0.24, 0.15]), and respect ($r = -.14$, $p = .14$, 95% CI = [-0.31, 0.05]) were much smaller. Order had no main or interaction effect.

For anxiety, there was a three-way interaction between unfairness, emotion type, and order. Follow-up regression analyses showed that for group-based anxiety, there only was a main effect of unfairness ($\beta = .40$, $p < .001$), but for general group anxiety, there was an interaction between unfairness and order ($\beta = -.23$, $p = .02$) such that unfairness was only related to anxiety when general group emotions were measured *after* group-based emotions ($r = .37$, $p = .004$) and not when general group emotions were measured first ($r = -.05$, $p = .74$). In other words, the mentioning of the poor treatment of Francophones was necessary to establish a correlation between unfairness and general group anxiety. Presumably, more participants interpreted the general group emotion questions as being about the treatment of Francophones when they were asked after rather than before the measurement of group-based emotions.

Admiration was the only emotion that was not at all related to unfairness. The only significant effect was an interaction between emotion type and order, $F(1, 107) = 4.19$, $p = .04$, $\eta_p^2 = .04$. General group admiration was higher when general group emotions were measured before ($M = 4.96$) rather than after group-based emotions ($M = 3.63$), $F(1, 107) = 10.26$, $p = .002$, $\eta_p^2 = .09$. Group-based admiration was not affected by whether group-based emotions were measured first ($M = 3.78$) or last ($M = 3.84$), $F(1, 107) = 0.02$, $p = .90$, $\eta_p^2 = .00$. As for anxiety, this pattern suggests that general group admiration acquired a different meaning when its measurement came after the discussion of the poor treatment of Francophones and the measurement of group-based emotions.

Behavioral intentions. We predicted that behavioral intentions would be more strongly related to group-based emotions than to general group emotions. This was indeed the case. Table 5 reports correlations between negative behavioral intentions and the emotions anger, anxiety, and satisfaction. For every single combination of emotions and behavioral intentions, the correlation is higher for group-based than for general group emotions. Only 1 in 15 correlations with general group emotions is significant, whereas 12 out of 15 are significant for group-based emotions.

Identification and negative emotions. Another crucial result of Study 3 that we aimed to replicate in Study 4 was the relation between identification and negative emotions. We fitted the same multilevel model as in Study 3. Identification interacted with both emotion type, $B = .28$, $p = .03$, 95% CI = [0.03, 0.53] and emotion order, $B = -.79$, $p = .04$, 95%

Table 5. Correlations Between Emotions and Behavioral Intentions (Study 4).

	Confront the Flemish	Impose my opinion	Treat Flemish the same way	Make life difficult	Avoid the Flemish
General group anger	.08	.19*	-.05	.13	.15
Group-based anger	.24*	.36***	.17	.43***	.34***
General group anxiety	.08	.18	.02	.11	.09
Group-based anxiety	.25**	.37***	.22*	.32***	.30**
General group satisfaction	-.01	-.07	.01	-.09	-.02
Group-based satisfaction	-.12	-.31**	-.12	-.27**	-.275**

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

CI = [-1.54, -0.04]. Simple effects indicated that negative general group emotions had a negative relation with identification ($B = -.47, p = .14$) when general group emotions were measured *before* group-based emotions (replicating effects of Smith et al. and Study 3), but a positive relation ($B = .53, p = .11$) when they were measured *after* group-based emotions. Negative group-based emotions were positively related with identification both when they were measured *before* ($B = .91, p = .006$) and *after* ($B = .33, p = .31$) general group emotions. This confirms that negative general group emotions have a different relation with identification than group-based emotions do, and in addition, shows that this pattern was much clearer for the emotions that were measured first (consistent with the previously reported order effects).

Affective identification and general group emotions. Regarding the identification by emotion valence interaction (and the special role played by the satisfaction dimension in Studies 1-3), things were different in Study 4. The overall identification by emotion valence interaction was not significant ($B = .17, p = .24$) and the estimate of this interaction fell outside the 95% CIs provided by Studies 1 to 3. A possible explanation for this is that we assessed general group emotions as, and identification with “francophone Belgians.” The mentioning of *francophone* Belgians could automatically make the comparison with Dutch-speaking Belgians salient because the relation with the Dutch-speaking Belgians is the primary context in which the label “francophone Belgians” is used. This might have changed the object of the emotion, given that no specific object is provided in measures of general group emotions. Francophone Belgians usually refer to themselves simply as “Belgians,” but we could not use this group label because it comprises Dutch-speaking Belgians. Given that the identification by emotion valence interaction was so different than in Studies 1 to 3, we do not present a more detailed analysis.

General Discussion

We wanted to bring more clarity regarding the conceptual criteria and the terms that are used for group-related emotions. The criterion we focused on is whether emotions

involve appraisals of group concerns (i.e., group-based appraisals). Consistent with early theoretical and empirical work, we defined *group-based emotions* as emotional reactions to group concerns, rooted in group-based appraisals. In other words, group-based emotions are emotions *on behalf of* the group. Empirically, we distinguished between these group-based emotions and *general group emotions*. General group emotions are emotions that people report when they are asked to report how they feel “as a member of a group,” without specifying any particular group event or concern. Our claim is that the conceptual nature of general group emotions was not completely clear. Previous research has considered that general group emotions involve group-based appraisal but in a more general or chronic way. However, the data assembled in the present set of studies strongly suggest that general group emotions are emotions about belonging to the group.

General Group Emotions Are Emotions About Belonging to the Group

Several findings support our assertion that general group emotions do not involve immediate group-based appraisals about specific group concerns but are emotions about group belonging (i.e., how people feel about being a group member). First, negative general group emotions correlate negatively with group identification. No theory predicts this negative relation (except for group-critical emotions) and no previous study has reported a negative relation between identification and negative group-based emotions (again, except for group-critical emotions), whereas many studies reported a positive relation (e.g., Mackie et al., 2000; Musgrove & McGarty, 2008; Yzerbyt et al., 2003).

Second, only “satisfaction” (an affective dimension of identification) was independently related to general group emotions across two studies. A third study found that satisfaction is a significantly stronger predictor of general group emotions than of group-based emotions. This means that identification’s positive (negative) relation with positive (negative) general group emotions is mainly driven by positive feelings toward, and the motivation to maintain a positive image of, the group.

Third, we found structurally similar relations between identification and emotions when we assessed emotions by asking explicitly for emotions *about participants' group belonging*. This tells us that general group emotions are indeed highly similar to emotions that are explicitly measured as belonging emotions. Moreover, there was also a strong correlation ($r = .70$ and $.77$ in Studies 1 and 2, respectively) between general group emotions and belonging emotions. Finally, we found that group-based appraisals were related to group-based emotions but not to general group emotions (Studies 3 and 4). Together, these findings lead us to conclude that general group emotions are emotions about group belonging. This means that emotions about group belonging are primarily or even exclusively a reaction to individual concerns, that is, the nature of the individual's belonging to the group. Whether individuals feel happy or unhappy about the fact that they belong to a particular group depends on how they as individuals appraise their relation with this group.

Our concern for theoretical integration makes us note that general group emotions are closely related to an affective dimension of social identification such as private collective self-esteem (Luhtanen & Crocker, 1992), group self-esteem (Ellemers, Kortekaas, & Ouwerkerk, 1999), satisfaction (Leach et al., 2008), or merit (Correll & Park, 2005). Indeed, the conceptual difference between emotions about group belonging (our interpretation of general group emotions) and feelings about group membership (the affective dimension of identification) seems to be very small. In other words, general group emotions are probably best seen as an alternative measure of the affective dimension of identification.

We argued that general group emotions are better conceptualized as emotions *about* group belonging than as group-based emotions. There might be still other types of group processes that feed into measures of general group emotions. They might tap emotions about the individual's position in the group, aspects of the emotional climate that prevails within a group, or even individuals' perception of how the group is being seen by other people, that is, cultural stereotypes about the group. To avoid confusion about what exactly is measured, researchers could clearly define the object of the emotion that they are measuring. For example, future research could explicitly measure belonging emotions ("How do you feel about belonging to your group") instead of measuring general group emotions and leaving ambiguity about which group-level aspect of emotions is tapped. Theoretically, this fits with how emotions have been conceptualized as reactions to specific events and concerns in appraisal theories (e.g., Scherer et al., 2001).

Shared Versus Group-Based Emotions

The shared character of emotions is often presented as a key symptom of the group-based nature of emotions. However, the shared nature of emotions is not a good criterion for deciding whether an emotion is group-based (i.e., results from group

concerns) because individual emotions can be shared due to social/cultural influence (Hatfield, Cacioppo, & Rapson, 1994; Mesquita & Markus, 2004; Parkinson et al., 2005; Turner et al., 1987) without being a response to group concerns. For example, students who are waiting to pass an exam can influence each other's anxiety, but this anxiety is an individual emotion because it is a reaction to an individual concern. Conversely, emotions can also be group-based without being shared, for example, when a group member appraises the situation of his group without sharing this appraisal with others. Although the shared and group-based nature of emotions will often be intertwined, they are two separate characteristics and should not be equated or confused with each other in conceptual definitions. It is worth noting that E. R. Smith and colleagues (2007) used the shared nature of general group emotions as a criterion for their group-related nature. However, a careful re-analysis of their data revealed that general group emotions are in fact more and not less variable than individual emotions (Kuppens & Yzerbyt, 2014).

Coda

Group-based emotions are emotional reactions to group concerns. To measure group-based emotions, one needs to make sure that group concerns and group-based appraisals shape people's answers when they report their emotions. One solution is to assess emotional reactions to particular group events, in which case, the event is specified as the object of the emotion. A second solution is to first ask questions about group-based appraisals to focus participants' attention on group concerns. Defining the object of emotions will make it clearer that the emotional reactions that people report are not emotions *about* being a group member (i.e., belonging emotions) but rather emotions *on behalf of* the group (i.e., group-based emotions).

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Notes

1. We dropped the item "I often think about the fact that I am a UCL student" because it had a much lower correlation with the two other centrality items.
2. Other differences between this model and the analysis of E. R. Smith, Seger, and Mackie (2007) are that (a) we did not use the mean general group emotion as a predictor (see Kuppens & Yzerbyt, in press), and (b) for "individual emotion," we left out its interaction with identification and its Level 2 random part because these were not significant. The SAS syntax for this model is as follows:
Proc mixed noclprint covtest;
Class subject emotion;
Model gge = indemo sat sol cent self val indemo*val sat*val sol*val cent*val self*val /solution ddfm=kr;
Random intercept valence /type=un sub=subject;
Random intercept /sub=emotion;
3. This relationship is only marginally significant due to the multicollinearity with the other identification scales. If the other identification scales (none of which had significant main or interaction effects) are left out of the model, the simple effect of satisfaction on positive belonging emotions is very reliable ($B = .62, p < .001$). Their bivariate correlation is also significant, $r = .50, p < .001$.
4. Question order (whether general group emotions or belonging emotions were assessed firsts) did not have a main or interaction effect and is therefore excluded from the model.
5. There is no real inconsistency with Study 1 or with E. R. Smith et al. (2007) here, as bivariate correlations between satisfaction and negative emotions were negative, $r = -.09, p < .05$ (but smaller than the same correlation in Study 1, $r = -.36, p < .001$). The non-significance of this relation in the multilevel model is due to the fact that the other identification scales and individual emotions are controlled for in the model.
6. Again, the bivariate correlation between satisfaction and negative belonging emotions was negative, $r = -.13, p < .001$, albeit smaller than in Study 1, $r = -.47, p < .001$.
7. All confidence intervals (CI) for r were estimated using bootstrapping.

Supplemental Material

The online supplemental material is available at <http://pspb.sagepub.com/supplemental>.

References

- Barsade, S. G., & Gibson, D. E. (1998). Group emotion: A view from top and bottom. *Research on Managing Groups and Teams, 1*, 81-102.
- Bizman, A., Yinon, Y., & Krotman, S. (2001). Group-based emotional distress: An extension of self-discrepancy theory. *Personality and Social Psychology Bulletin, 27*, 1291-1300.
- Blumer, H. (1958). Race prejudice as a sense of group position. *The Pacific Sociological Review, 1*, 3-7.
- Combs, D. J. Y., Powell, C. A. J., Schurtz, D. R., & Smith, R. H. (2009). Politics, schadenfreude, and ingroup identification: The sometimes happy thing about a poor economy and death. *Journal of Experimental Social Psychology, 45*, 635-646.
- Correll, J., & Park, B. (2005). A model of the ingroup as a social resource. *Personality and Social Psychology Review, 9*, 341-359.
- Doosje, B., Branscombe, N. R., Spears, R., & Manstead, A. S. R. (1998). Guilty by association: When one's group has a negative history. *Journal of Personality and Social Psychology, 75*, 872-886.
- Ellemers, N., Kortekaas, P., & Ouwerkerk, J. W. (1999). Self-categorisation, commitment to the group, and group self-esteem as related but distinct aspects of social identity. *European Journal of Social Psychology, 29*, 371-389.
- Gordijn, E. H., Wigboldus, D., & Yzerbyt, V. Y. (2001). Emotional consequences of categorizing victims of negative out-group behavior as ingroup or outgroup. *Group Processes & Intergroup Relations, 4*, 317-326.
- Gordijn, E. H., Yzerbyt, V. Y., Wigboldus, D., & Dumont, M. (2006). Emotional reactions to harmful intergroup behavior. *European Journal of Social Psychology, 36*, 15-30.
- Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). *Emotional contagion*. Cambridge, UK: Cambridge University Press.
- Iyer, A., & Leach, C. W. (2008). Emotion in inter-group relations. *European Review of Social Psychology, 19*, 86-125.
- Kuppens, T., & Yzerbyt, V. Y. (2014). Predicting variability: Using multilevel modelling to assess differences in variance. *European Journal of Social Psychology*. doi:10.1002/ejsp.2028
- Leach, C. W., van Zomeren, M., Zebel, S., Vliek, M. L. W., Pennekamp, S. F., Doosje, B., . . . Spears, R. (2008). Group-level self-definition and self-investment: A hierarchical (multicomponent) model of in-group identification. *Journal of Personality and Social Psychology, 95*, 144-165.
- Leonard, D. J., Moons, W. G., Mackie, D. M., & Smith, E. R. (2011). "We're mad as hell and we're not going to take it anymore": Anger self-stereotyping and collective action. *Group Processes & Intergroup Relations, 14*, 99-111. doi:10.1177/1368430210373779
- Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and Social Psychology Bulletin, 18*, 302-318.
- 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., Silver, L. A., & Smith, E. R. (2004). Intergroup emotions: Emotions as an intergroup phenomenon. In L. Z. Tiedens & C. W. Leach (Eds.), *The social life of emotions* (pp. 227-245). Cambridge, UK: Cambridge University Press.
- Mesquita, B., & Markus, H. R. (2004). Culture and emotion: Models of agency as sources of cultural variation in emotion. In A. S. R. Manstead, N. H. Frijda, & A. H. Fischer (Eds.), *Feelings and emotions: The Amsterdam symposium* (pp. 341-358). Cambridge, UK: Cambridge University Press.
- Moons, W. G., Leonard, D. J., Mackie, D. M., & Smith, E. R. (2009). I feel our pain: Antecedents and consequences of emotional self-stereotyping. *Journal of Experimental Social Psychology, 45*, 760-769.
- Musgrove, L., & McGarty, C. (2008). Opinion-based group membership as a predictor of collective emotional responses and support for pro- and anti-war action. *Social Psychology, 39*(1), 37-47.
- O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers, 32*, 396-402.

- Parkinson, B., Fischer, A. H., & Manstead, A. S. R. (2005). *Emotion in social relations: Cultural, group, and inter-personal processes*. New York, NY: Psychology Press.
- Petrocelli, J. V., & Smith, E. R. (2005). Who I am, who we are, and why: Links between emotions and causal attributions for self and group discrepancies. *Personality and Social Psychology Bulletin, 31*, 1628-1642. doi:10.1177/014616720-5277390
- Runciman, W. G. (1966). *Relative deprivation and social justice: A study of attitudes to social inequality in twentieth-century England*. London, England: Routledge & Kegan Paul.
- 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. doi:10.1177/0146167208319694
- Scherer, K. R., Schorr, A., & Johnstone, T. (2001). *Appraisal processes in emotion: Theory, methods, research*. Oxford, UK: Oxford University Press.
- Seger, C. R., Smith, E. R., & Mackie, D. M. (2009). Subtle activation of a social categorization triggers group-level emotions. *Journal of Experimental Social Psychology, 45*, 460-467.
- 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, CA: Academic Press.
- Smith, E. R. (1999). Affective and cognitive implications of a group becoming a part of the self: New models of prejudice and of the self-concept. In D. Abrams & M. A. Hogg (Eds.), *Social identity and social cognition* (pp. 183-196). Malden, MA: Blackwell.
- 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.
- Smith, H. J., & Kessler, T. (2004). Group-based emotions and intergroup behavior: The case of relative deprivation. In L. Z. Tiedens & C. W. Leach (Eds.), *The social life of emotions* (pp. 292-313). Cambridge, UK: Cambridge University Press.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In W. G. Austin & S. Worchel (Eds.), *Psychology of intergroup relations* (pp. 7-24). Chicago, IL: Nelson Hall.
- 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, UK: Basil Blackwell.
- Wann, D. L., Dolan, T. J., McGeorge, K. K., & Allison, J. A. (1994). Relationships between spectator identification and spectators' perceptions of influence, spectators' emotions, and competition outcome. *Journal of Sport and Exercise Psychology, 16*, 347-364.
- Yzerbyt, V. Y., & Demoulin, S. (2010). Intergroup relations. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (5th ed., pp. 1024-1083). Hoboken, NJ: John Wiley.
- Yzerbyt, V. Y., Dumont, M., Mathieu, B., Gordijn, E. H., & Wigboldus, D. (2006). Social comparison and group-based emotions. In S. Guimond (Ed.), *Social comparison processes and levels of analysis: Understanding cognition, intergroup relations, and culture* (pp. 174-205). Cambridge, UK: Cambridge University Press.
- Yzerbyt, V. Y., Dumont, M., Wigboldus, D., & Gordijn, E. H. (2003). I feel for us: The impact of categorization and identification on emotions and action tendencies. *British Journal of Social Psychology, 42*, 533-549.