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Group-Based Emotions: The Impact of Social Identity on Appraisals, Emotions, and Behaviors

Toon Kuppens and Vincent Y. Yzerbyt

Université catholique de Louvain

Because group-based emotions are rooted in the social identity of the perceiver, we propose that group-based emotions should be sensitive to changes in this social identity. In three experiments, young women reported feeling more anger, fear, and disgust toward Muslims when their identity as women had been made salient, in comparison with various control conditions where their identity as young adults, as social sciences students, their personal identity, or no identity had been made salient. These effects were mediated by appraisals of intergroup threats. In Experiment 3, the salience of the woman social identity also increased intentions to avoid Muslims.

Are people's reactions to groups other than their own set in stone, or is it possible to change the feelings that individuals experience when they meet or even simply think about members of stigmatized groups? Research on intergroup relations suggests a number of strategies (for reviews, see Brown & Hewstone, 2005; Yzerbyt & Demoulin, 2010). In the present contribution, we contemplate the possibility that one important factor in shaping the way people think, feel, and behave when they are confronted with outgroup members is the specific social identity that is salient in the context. In three experiments, we tested the hypothesis that making salient one specific group membership rather than another may orient people toward very different cognitive appraisals and may, as a result, trigger a different pattern of affective reactions toward the same target group. A key feature of the present contribution, and one that distinguishes it from most earlier work on group-based emotions, is that we changed the active social identity of the perceiver *without changing the identity of the target group*. Crucially, we hoped to emphasize the role of appraisals that people make on behalf of their ingroup. To this end, we investigated whether the effect of social identity on emotions was mediated by relevant group-based appraisals.

Correspondence should be sent to Toon Kuppens or Vincent Y. Yzerbyt, Université catholique de Louvain, Place du Cardinal Mercier 10, B-1348 Louvain-la-Neuve, Belgium. E-mail: toon.kuppens@gmail.com or vincent.yzerbyt@uclouvain.be

FROM GENERAL PREJUDICE TO DIFFERENTIATED EMOTIONS

A major feature of intergroup relations research, one that is inherited from the work on social identity (Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), is the realization that people may often react not so much as individuals but rather as group members (Brewer & Brown, 1998; Ellemers, Spears, & Doosje, 1999, 2002). Opposing the long unspoken view that people navigate the social world as isolated units, this perspective celebrates instead the importance of larger social entities to which people belong in orienting their beliefs, feelings, and actions.

A second major aspect of current research on intergroup relations is that the complex picture that people draw as they decode and represent their social environment triggers a multifaceted pattern of affective reactions and an equally rich and versatile set of behavioral reactions (Cottrell & Neuberg, 2005; Cuddy, Fiske, & Glick, 2007; Smith, 1999; Yzerbyt & Demoulin, 2010). This is in sharp contrast to early views of prejudice in which prejudice is seen as a general undifferentiated emotional reaction, generally a negative one, which triggers a host of negative beliefs and discriminatory behaviors (Allport, 1954).

Both of these innovations are combined in the conceptualization of group-based emotions. Combining cognitive appraisal theories (e.g., Frijda, 1986; Scherer,

1988) and self-categorization theory (Turner et al., 1987), Smith (1993, 1999) proposed that when group membership is salient, the appraisal processes that elicit emotions (and that are usually conceptualized at the individual level) may well be operating at the group level. Because the salience of a social identity causes that ingroup to become part of the self (Smith & Henry, 1996), people start seeing their social environment through some sort of group lens and engage in processes of *group-based appraisal*. Parkinson, Fischer, and Manstead (2005) as well as Iyer and Leach (2008) have referred to these kinds of group-based emotions as emotions for which the *subject* is a group member instead of an individual. If the *object* of these group-based emotions is also a group (an outgroup), one then speaks of intergroup emotions (see, e.g., Doosje, Branscombe, Spears, & Manstead, 1998; Mackie, Devos, & Smith, 2000).

The idea that emotions can be rooted in social identity instead of personal identity (and thus result from group-based instead of individual appraisal) has been supported in a number of empirical studies (for recent reviews, see Iyer & Leach, 2008; Yzerbyt, Dumont, Mathieu, Gordijn, & Wigboldus, 2006). Consistent with the message that group-based emotions are a combination of emotional appraisal and social identity, two empirical strategies have been used to show that people do indeed experience emotions as a consequence of their group membership. Each one of them focuses on one of these two aspects. Whereas a first strategy consists in changing the situation (in the hope that this will change the appraisals), the second strategy rests on changing the specific social identity that is salient in the context. Clearly, each strategy also suggests different routes for altering intergroup relations.

In an early example of the first strategy, Doosje et al. (1998) manipulated information about the past behaviors of the Dutch colonial power in Indonesia. They found that, in general, their Dutch participants reported more group-based guilt when the information provided to them focused on the wrongdoings of the Dutch in Indonesia. It can thus be shown that a modification in the situation of their group exerts a predictable impact on people's emotional reactions. This suggests that one way of changing the nature of intergroup relations is to change (the perception of) the intergroup situation itself, which should then trigger a change in the appraisals of the situation as well.

In the second strategy, the objective situation remains the same, but it is people's social identity that is being manipulated. Using such a "social identity" strategy, a series of studies (Dumont, Yzerbyt, Wigboldus, & Gordijn, 2003; Gordijn, Wigboldus, & Yzerbyt, 2001; Gordijn, Yzerbyt, Wigboldus, & Dumont, 2006; Yzerbyt, Dumont, Wigboldus, & Gordijn, 2003) found

that when a victim of harmful behavior is perceived to belong to the same group as the self (i.e., the ingroup), one is more likely to feel emotions and to express the corresponding action tendencies on behalf of the victim than when the victim is perceived to belong to an outgroup. In comparison with changing the intergroup situation, this suggests a different way of affecting intergroup relations. Nothing is done here to change the situation itself directly. Rather, changing the *salient social identity* changes the boundaries between ingroup and outgroup members, which is expected to have consequences for how the situation is perceived (Gaertner & Dovidio, 2000).

A number of studies have already used this "social identity" strategy and shown that emotions toward a target can be influenced by the perceiver's social identity (e.g., Dumont et al., 2003; Yzerbyt et al., 2003). Of interest, all these studies have in common that they exploited some version of a cross-categorization paradigm. That is, by bringing participants to define themselves in one of several ways, the target was seen as an ingroup or as an outgroup member. For instance, Yzerbyt and colleagues (2003) made salient to their participants either their social identity as students or their identity as students at the Catholic University of Louvain. Participants were then given a newspaper article that presented the students of another university being angry about a decision of the Board of Directors of that university. As predicted, anger on behalf of the victims was stronger when the common social identity of participants and victims ("students") was made salient.

These studies suggest that in the common social identity condition, group-based appraisals trigger group-based emotions that are similar to those of the victims. However, the social identity manipulation used in these studies also changed the ingroup or outgroup status of the target group (i.e., the victims). It is therefore possible that the emotions resulted not from group-based appraisal but rather from increased empathy with the victims when their similarity to the self (common group membership) had been made salient (Parkinson et al., 2005, p. 130).

Two recent studies have addressed this issue, that is, they have manipulated social identity salience for the perceivers without directly changing the ingroup or outgroup status of the target group. In one study (van Zomeren, Spears, & Leach, 2008), participants' student or personal identity was rendered salient. Then participants learned that tuition fees would be raised by the university board without even consulting the students. In response to the bogus tuition fee story, participants in the student identity condition reported stronger anger and increased intentions for collective action in comparison with the personal identity condition. Another study (Ray, Mackie, Rydell, & Smith, 2008) was

conceptually similar and produced consistent, albeit weaker[1], results. Crucially, however, neither of these studies measured appraisals, so they were unable to establish that the change in emotions was due to a change in appraisals. In conclusion, whether changing perceivers' social identity without changing the ingroup or outgroup status of the target group affects group-based emotions *through group-based appraisals* remains an open question.

Our main ambition in the present work was to fill this gap and to test whether a modification in the contextually salient social identity of perceivers leads to different group-based appraisals and group-based emotions even when the group status of the social target remains unchanged (i.e., *the target remains an outgroup member*). In addition to changing the intergroup situation and making salient a common ingroup, the present strategy can thus be seen as yet another way of showing that emotions can result from social identity, thereby suggesting an additional route to changing intergroup relations. There is no attempt to change the situation itself, but changing the salience of people's social identity is expected to alter those aspects of the situation that are deemed relevant and how these are appraised.

OVERVIEW OF THE STUDIES AND HYPOTHESES

Our thesis is that the same general intergroup situation can be interpreted differently depending on the contextually salient social identity. The reason is that the social identity will influence how one appraises the situation and what will be considered relevant (i.e., social identity will lead to group-based appraisal). To the extent that this is the case, the social identity manipulation should also have an impact on emotions and behavioral tendencies. We conducted three experiments to examine the viability of our reasoning. In all experiments, we asked female students for their reactions toward Muslims. We manipulated the salience of a specific social identity (woman as opposed to young adult and no identity in

Experiment 1, woman as opposed to personal and social sciences student identity in Experiment 2, and woman as opposed to personal identity in Experiment 3) and predicted that this would lead to specific appraisals, emotions, and behavioral tendencies. Our predictions focused on participants' social identities as women.

Our first goal was to test whether women would experience different appraisals and emotions toward Muslims when their identity as a woman had been made salient. To have a list of specific appraisals and emotions that could be relevant in the context we wanted to investigate, we relied on Neuberg and Cottrell's (Cottrell & Neuberg, 2005; Neuberg & Cottrell, 2003) sociofunctional model of group-based emotions. These authors argue that specific intergroup threats cause specific intergroup emotions and particular behavioral tendencies toward outgroups. Their sociofunctional model is an application of well-known appraisal theories to intergroup contexts and provided us with a clear list of intergroup threat appraisals. We expected three threat appraisals to be relevant to the woman social identity in relation to the group of Muslims. As a matter of fact, the public discourse on Muslims emphasizes their very different cultural background and the allegedly subordinate position of women in the Muslim community. Threat to personal freedoms and rights and threat to group values can therefore be considered to be particularly relevant for women. Furthermore, in many European countries comprising sizeable proportions of Muslim immigrants, Muslims are associated with street violence and harassment. Because women are physically weaker than men, threat to physical safety is likely to be particularly relevant for women as well. We also included four other threat appraisals mentioned by Cottrell and Neuberg (2005) that we thought could be applicable to Muslims but were not especially relevant to the woman social identity.

The sociofunctional model, as proposed by Cottrell and Neuberg (2005), links appraisals to specific emotional reactions. In particular, a threat to physical safety would lead to feelings of fear, threat to personal rights and freedoms would lead to anger, and a threat to group values would lead to disgust. We therefore expected to see more anger, fear, and disgust when the woman identity was made salient, and our analyses focus on these three negative emotions. In addition, we measured emotional reactions of pity and guilt.

Our use of specific threat appraisals and emotions allowed us to pursue a second goal. We wanted to investigate whether specific threats were linked to specific group-based emotions. In practice, this conjecture would be supported if the effect of social identity salience on fear were mediated by different threats than the effect on anger or disgust. We tested our mediational hypothesis by means of multiple mediator models.

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[1]The authors emphasized either participants' American or their student identity, and they measured anger and respect toward Muslims and the police. A three-way interaction between social identity (American vs. student), target group (Muslims vs. the police), and emotion type (anger vs. respect) seems to provide evidence for the effect of social identity salience on group-based emotions. However, additional data presented by the authors suggest that emotions toward the police were affected by a recategorization of the police as ingroup members in the American condition. The remaining two-way interaction between participants' social identity (American vs. student) and emotion type (anger vs. respect) for emotions toward Muslims was only marginally significant ($p < .09$), and none of the simple effects of categorization were significant (D. G. Ray, personal communication, May 18, 2009).

EXPERIMENT 1

We asked female students for their reactions toward Muslims in one of three conditions. In the experimental condition, we stressed our participants' identity as a woman. In a first control condition, we did not manipulate our participants' social identity at all. In a second control condition, we made a particular social identity salient but one that we hoped was not particularly related to our target group, namely, young adults. We predicted that, compared to the control condition in which no specific social identity was activated or to the control condition in which the social identity of young adults was made salient, female students whose social identity as a woman was made salient would report more intense anger, fear, and disgust. We furthermore predicted higher appraisal scores for three intergroup threats that we thought would be relevant to participants' social identities as women. Also, we expected the emotional reactions to be lawfully related to the appraisals, and the impact of our manipulation on emotions to be mediated by these appraisals.

Method

Participants. A total of 110 female Belgian, Dutch-speaking students enrolled at the Free University of Brussels filled out a questionnaire in a large classroom.

Social identity manipulation. To manipulate the social identity that was salient in the context, we designed three different versions of the questionnaire, one for each condition. Whereas one version did not mention any social identity, the two others made salient a particular social identity, either the "woman" social identity or the "young adult" one. This was done by means of several steps. First, participants learned at the beginning of the questionnaire that the researchers were interested in the differences in opinion either between women and men or between young persons and old persons. This instruction was followed by three items that immediately assessed how much they identified with the group (woman or young adult) on a scale ranging from 1 (*not at all*) to 7 (*very much*).

Second, participants had to indicate whether eight stereotypic traits applied to their own group (women or young adults) or to the contrast group (men or old persons) on a scale ranging from 1 (*applies more to own group than to other group*) to 9 (*applies more to other group than to own group*). Participants in the no social identity condition were not presented with these two questions.

Finally, immediately before answering the emotion items, participants were reminded that we were interested in their opinion "as a young adult" or "as a woman" or no such instruction was added (in the no social identity control condition). This is similar to other research tapping group-based emotions. For example, Seger, Smith, and Mackie (2009) asked their respondents, "As an American, to what extent do you feel the following emotions" (p. 462). For the appraisal items, our manipulation was slightly different. Instead of reading, "We are interested in your opinion as a woman," and then evaluating the statement "Muslims endanger my physical safety," our participants in the woman condition responded to the statement, "Muslims endanger the physical safety of women like me" (the appraisal items in the other conditions were similarly adapted to read "young adults like me" and "people like me"). This emphasizes our interest in group-based appraisals ("What do Muslims do to my group?") and should prevent participants from merely reporting emotions that they think are typical for women in general, based on so-called *identity-related beliefs* (see Robinson & Clore, 2002).

Dependent variables. Seven appraisal scales were included in the questionnaire, each of them measured by way of two items (see Appendix A for all items): threat to personal rights and freedoms ($r = .75$), threat to physical safety ($r = .74$), threat to group values ($r = .51$), threat to reciprocity because of inability to reciprocate ($r = .38$), threat to moral standing ($r = .43$), threat to trust relations ($r = .86$), and threat to health via contagion ($r = .81$). The questionnaire also comprised five emotion scales, each measured by means of two items: anger ($r = .64$), fear ($r = .87$), disgust ($r = .61$), shame/guilt ($r = .33$), and pity ($r = .12$[2]). All appraisal and emotion items were answered on scales ranging from 1 (*not at all*) to 9 (*very much*). The means and standard deviations (by condition) of all dependent variables are reported in Table 1.

Procedure. The three different versions of the questionnaire were randomly distributed in the classroom with comparable numbers of participants falling in the no social identity (34), woman (39), and young person (37) conditions. The social identity manipulation questions came first, followed by the appraisal and then the emotion items.

Results

Appraisals. All seven appraisal scales were used as the criteria in regression analyses with the social identity

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[2]The pity scale clearly lacks reliability. We therefore use only the item "pity" to represent this emotion (but conclusions are identical if the other item or the two-item scale is used).

TABLE 1
Means (Standard Deviations) for All Dependent Variables in
Experiment 1, by Condition

	No Identity	Woman	Young Adult
Threat appraisals			
Personal rights and freedoms	2.31 (1.59)	4.40 (2.33)	2.64 (1.51)
Physical safety	2.53 (1.57)	4.15 (2.10)	2.96 (1.78)
Group values	4.04 (1.81)	5.28 (2.05)	4.34 (1.54)
Reciprocity because of inability to reciprocate	2.53 (1.55)	3.77 (1.73)	3.03 (1.45)
Moral standing	2.75 (1.61)	3.58 (2.08)	3.34 (1.38)
Trust relations	2.18 (1.61)	3.51 (2.17)	2.87 (1.76)
Health	1.43 (0.68)	2.17 (1.50)	2.00 (1.40)
Emotions			
Anger	3.29 (1.86)	4.22 (1.95)	3.77 (1.88)
Fear	4.00 (2.02)	4.85 (2.07)	4.16 (2.09)
Disgust	2.71 (1.71)	3.64 (1.74)	3.08 (1.52)
Shame/Guilt	2.68 (1.29)	2.60 (1.69)	2.59 (1.39)
Pity (one item)	3.15 (2.02)	3.21 (1.85)	3.49 (1.87)

conditions, represented by two contrasts, as the predictors. Whereas the first contrast (C1) compared the woman condition with the two other conditions, the second (C2) compared the young adult condition to the no social identity condition. C1 was positive and significant in five out of the seven regression analyses (see Table 2). Women in the woman condition perceived more threat to personal rights and freedoms, threat to

TABLE 2
Effect of Social Identity Condition on Threat Appraisals and Emotions
(Experiment 1)

	Woman Versus Other	Control Versus Young Adult
Threat appraisals		
Personal rights and freedoms	0.45***	0.06
Physical safety	0.35***	0.09
Group values	0.28**	0.06
Reciprocity because of inability to reciprocate	0.29**	0.12
Moral standing	0.15	0.14
Trust relations	0.24**	0.15
Health	0.17†	0.18†
Emotions		
Anger	0.17†	0.10
Fear	0.18†	0.03
Disgust	0.21*	0.09
Shame/Guilt	−0.01	−0.02
Pity	−0.03	0.07

Note. All appraisals and emotions were used as the criterion in a regression analysis with social identity condition represented by two orthogonal contrasts. The first contrast compared the woman identity to the other two conditions. The second contrast compared the no identity to the young adult identity condition. Parameters are standardized regression coefficients.
$*p < .05.$ $**p < .01.$ $***p < .001.$ $†p < .10.$

physical safety, threat to group values, threat to reciprocity, and threat to trust relations than women in the control conditions. C2 never reached significance.

Emotions. The five emotion scales were analyzed in the same way as the appraisals. C1 was positive and significant for disgust and marginally significant for anger and fear (see Table 2). No effects were found for shame/guilt and pity. C2 never reached significance, confirming our expectation that the young person identity would not be relevant for the Muslim target group.

Mediational analyses. To test whether the impact of social identity on disgust, fear, and anger was mediated by the predicted appraisals, we relied on a bootstrapping procedure (see Preacher & Hayes, 2008). We used all five threats that proved sensitive to the social identity manipulation in a multiple mediator model. When the mediators were added to the model, the effect of C1 on disgust, fear, and anger was no longer significant (all $ps > .39$). The only significant indirect effect for *disgust* was through threat to group values (0.10, $p < .05$). For *fear* (see Figure 1), there were three significant mediators: threat to physical safety (0.26, $p < .05$), threat to group values (0.09, $p < .05$), and threat to trust relations (0.10, $p < .05$). The effect of the social identity manipulation on *anger* was mediated by threat to physical safety (0.18, $p < .05$) and threat to trust relations (0.15, $p < .05$).

Discussion

We predicted that making salient participants' social identity as a woman would lead to an increase in appraisals of threat to physical safety, threat to group values, and threat to personal rights and freedoms (intergroup threats taken from the sociofunctional model), and their
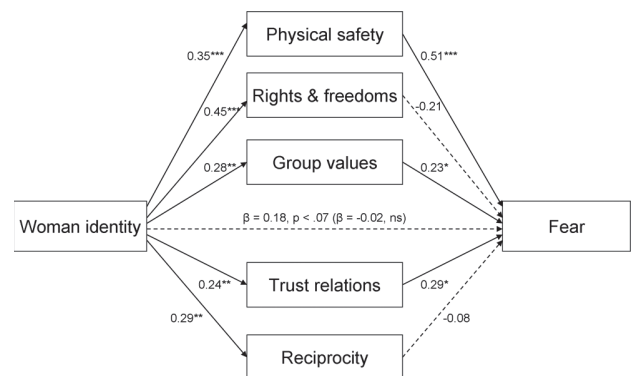

FIGURE 1   Multiple mediator model for the effect of social identity salience on fear (Experiment 1).

associated emotional reactions of fear, disgust, and anger, respectively. Confirming our hypotheses, we found these expected differences between the woman condition and the control conditions. Of interest, two other threat appraisals (threat to trust relations and threat to reciprocity) showed a similar pattern even though we had not predicted that they would be relevant to the woman social identity.

We also wanted to investigate the role of group-based appraisals for group-based emotions and predicted that the effect of making salient the woman identity on emotions would be mediated by the threat appraisals. This was indeed the case, and most indirect effects were found to be consistent with our theoretical predictions based on the sociofunctional model (and the appraisal theories from which the model is derived). The only exception is the absence of the expected mediation of the effect on anger by threat to personal rights and freedoms (but please note that in the sociofunctional model anger is related to nearly all intergroup threats).

Despite the encouraging nature of these results, Experiment 1 also has a series of limitations. The pity scale was not satisfactory, forcing us to rely on only one item to measure pity. The shame/guilt scale also had low reliability, and it could be argued that guilt should be measured separately from shame (Lickel, Schmader, & Barquissau, 2004). In Experiment 2, we sought to improve the measurement of these emotions.

An alternative explanation for the results of Experiment 1 is that making salient the woman identity changed not only the identity of the participants but also the identity of the target group. For instance, it is possible that our female participants in the woman condition thought more about Muslim men than Muslim women and that this, in turn, explains their stronger appraisals and emotions. Another possible account is that activating the woman identity simply activates information on the inferior role of women in the Muslim community and that this is what causes the effects on appraisals and emotions. We test these alternative explanations in Experiment 2.

EXPERIMENT 2

The goal of Experiment 2 was to replicate and extend the findings of Experiment 1 using a different social identity manipulation. We again had a condition in which we made the woman identity salient, but we changed the control conditions. In one control condition, we now asked participants explicitly for their personal opinion as a unique individual. This was done to emphasize the distinction between personal and social identity, and between individual and group-based emotions. We also included a second control condition in which we made

participants' social sciences student identity salient. As was the case for the young adult identity condition in Experiment 1, we did not expect the social sciences student identity to have an effect on appraisals or emotions, because social science students are not involved in intergroup relations with Muslims. We also implemented a series of minor changes in the dependent measures. To improve their reliability, we used a two-item scale for guilt and a three-item scale for pity, and we slightly reformulated the items for threat to reciprocity (see Appendix A).

Method

Participants. One hundred sixty-two female Dutch-speaking students in educational sciences at the University of Ghent agreed to fill in a questionnaire in a large classroom.

Dependent variables. We used the same appraisals scales as in Experiment 1 (see Appendix A), each measured with two items: threat to personal rights and freedoms ($r = .55$), threat to group values ($r = .40$), threat to physical safety ($r = .74$), threat to reciprocity because of inability to reciprocate ($r = .32$), threat to moral ($r = .72$), threat to health via contagion ($r = .53$), and threat to trust relations ($r = .34$). We also measured the same emotions as in Experiment 1: the anger ($r = .47$), fear ($r = .85$), disgust ($r = .47$), and guilt ($r = .75$) scales consisted of two items and the pity scale ($\alpha = .55$) had three. The means and standard deviations (by condition) of all dependent variables can be found in Table 3.

Social identity manipulation. We created three different versions of the questionnaire and manipulated social identity salience in the same way as in Experiment 1 with two exceptions. First, the no social identity questionnaire now explicitly referred to participants' personal opinions and feelings. Second, the young adult condition was now replaced by a social sciences student condition. Similar to Experiment 1, both the personal and the social science student condition were control conditions in which we expected the specific appraisals and emotions triggered by the woman identity to be less prevalent. Participants were randomly assigned to the woman (50), social sciences student (50), and personal conditions (62).

Muslim women or Muslim men. After the appraisal and emotion items, we asked participants whether they had thought about Muslim women or Muslim men (on a scale ranging from 1 to 9, with 9 meaning *more about Muslim men*) while answering the questions.

TABLE 3
Means (Standard Deviations) for All Dependent Variables in Experiment 2, by Condition

	Personal	Woman	Social Sciences Student
Threat appraisals			
Personal rights and freedoms	1.71 (1.06)	2.37 (1.55)	1.13 (0.32)
Physical safety	1.60 (1.08)	1.98 (1.40)	1.18 (0.86)
Group values	3.18 (1.54)	3.05 (1.60)	1.95 (1.04)
Reciprocity because of inability to reciprocate	2.00 (1.24)	2.50 (1.51)	1.67 (0.87)
Moral standing	2.60 (1.95)	2.42 (1.61)	2.00 (1.31)
Trust relations	1.41 (0.75)	1.55 (0.94)	1.04 (0.14)
Health	1.20 (0.60)	1.50 (1.02)	1.09 (0.44)
Emotions			
Anger	2.33 (1.43)	2.61 (1.61)	2.19 (1.19)
Fear	2.92 (2.02)	3.58 (2.02)	2.84 (1.76)
Disgust	2.01 (1.24)	2.23 (1.45)	1.77 (1.03)
Guilt	2.77 (1.95)	2.39 (1.59)	2.39 (1.57)
Pity	4.33 (1.39)	4.57 (1.24)	4.43 (1.30)

Inferior role of muslim women. At the end of the questionnaire, we asked participants whether the statements that "women can go their own way" and "women can determine their own future" were more applicable to Muslim or non-Muslim women in Belgium (on a scale ranging from 1 to 9, with 9 meaning *more applicable to non-Muslim women*). The two items were averaged ($r = .61$) to create an index of how much freer non-Muslim women are perceived to be compared to Muslim women.

Results

Appraisals. We used all appraisal scales as the criterion in a series of regression analyses. As in Experiment 1, the first contrast (C1) compared the woman condition with the two control conditions, and the second (C2) compared the social sciences student to the personal identity condition. The results for the first contrast showed that women in the woman condition perceived stronger threats than women in the control conditions, on all scales except for threat to moral standing (see Table 4). The second contrast was also significant for some appraisals, showing that participants in the social science student condition perceived less threat to personal rights and freedoms, group values, and trust relations than participants in the personal identity condition.

Emotions. We analyzed the emotions using the same model as the appraisals (see Table 4). We submitted all emotions to a regression analysis with the same two contrasts as earlier. As predicted, our female participants in the woman condition reported feeling more fear than those in the control conditions (the latter two not differing from each other; see Table 4). The means for anger

and disgust were in the expected direction, but the effect was not significant.

Mediational analyses. We conducted the same mediational analyses as in Experiment 1, but we looked only at the mediation for fear, as this was the only emotion for which we found a significant effect of our social identity manipulation. We used the six appraisals that were significantly higher in the woman condition as possible mediators in a multiple mediation model

TABLE 4
Effect of Social Identity Condition on Threat Appraisals and Emotions (Experiment 2)

	Woman Versus Other	Personal Versus Social Sciences Student
Threat appraisals		
Personal rights and freedoms	0.37***	−0.20**
Physical safety	0.23**	−0.15†
Group values	0.15*	−0.34***
Reciprocity because of inability to reciprocate	0.24**	−0.11
Moral standing	0.03	−0.15†
Trust relations	0.21**	−0.21**
Health	0.22**	−0.06
Emotions		
Anger	0.11	−0.04
Fear	0.17*	−0.02
Disgust	0.13	−0.08
Guilt	−0.05	−0.09
Pity	0.07	0.03

Note. All appraisals and emotions were used as the criterion in a regression analysis with social identity condition represented by two orthogonal contrasts. The first contrast compared the woman identity to the other two conditions. The second contrast compared the personal identity to the social sciences student identity condition. Parameters are standardized regression coefficients.
*$p < .05$. **$p < .01$. ***$p < .001$. †$p < .10$.

(Preacher & Hayes, 2008). When adding the mediators to the model, the effect of the C1 contrast (comparing the woman identity to the two other conditions) on fear disappeared ($p > .72$). There was only a significant indirect effect through threat to physical safety (0.15, $p < .01$). Moreover, this indirect effect was significantly stronger (all $ps < .07$) than each of the five other indirect effects.

Muslim women or Muslim men. In general, our participants thought more about Muslim men than about Muslim women ($M = 5.6$, $SD = 1.8$). Crucially, however, there were no differences between the three social identity conditions, $F(2, 160) = 0.001$, $p > .99$.

Inferior role of Muslim women. As expected, participants thought that non-Muslim women enjoy more freedom than Muslim women ($M = 7.3$, $SD = 1.3$) in Belgium. It is important to note, however, that there were no differences between the three social identity conditions, $F(2, 159) = 0.43$, $p = .65$, and the mean for the woman identity condition ($M = 7.3$) fell between that of the personal ($M = 7.4$) and social science student identity ($M = 7.2$) condition.

Discussion

We hypothesized that making salient the woman identity would lead to an increase in relevant appraisals and associated emotions. In line with predictions, making salient the woman identity (in comparison with the personal identity and the social sciences student identity) led to an increase in fear, an effect that was mediated by appraisals of threat to physical safety. There was some evidence for lower threat appraisals in the social sciences student condition than in the personal identity condition. Of interest, this means that social identity may not only increase but also decrease appraisals of intergroup threat. The effect of the social sciences student identity is consistent with work suggesting that social sciences students report less prejudice on questionnaire measures than other majors (see, e.g., Debusscher, Derks, Elchardus, & Pelleriaux, 1996; Guimond, Dambrun, Michinov, & Duarte, 2003). Participants might have used this knowledge when the social sciences student identity had been made salient (see Verkuyten & Hagendoorn, 1998). Emotions, however, were not different in the social sciences student condition.

A particularly important result of Experiment 2 is that there were no differences between conditions in how much the participants thought about Muslim men or Muslim women while filling in the questionnaire. This pattern rules out the alternative explanation that the effects of the woman social identity might be due to an implicit recategorization of the target group as Muslim men rather than Muslim women.

Ruling out another alternative explanation, there were no differences between conditions in how much participants thought that Muslim women occupy an inferior position. This means that it is not just the knowledge of this inferior position that causes the effects on emotions but the extent to which this knowledge is *appraised* as relevant to the self (see Lazarus, 1991, for a discussion of knowledge vs. appraisal). Activating the woman social identity makes the issue more self-relevant and causes an emotional reaction.

One limitation is that we restricted ourselves hitherto to appraisals and emotions, leaving out the issue of behavioral tendencies. Although, in the context of their sociofunctional model, Cottrell and Neuberg (2005) have not provided any empirical evidence to date regarding intentions or behavior, we saw it as an important goal to collect data regarding the impact of appraisals and emotions on participants' behavioral tendencies. To address this issue, we included a series of behavioral tendency measures in Experiment 3.

EXPERIMENT 3

The goal of Experiment 3 was to replicate the findings of Experiments 1 and 2 and to extend them to behavioral tendencies. We included only the woman social identity condition and the personal identity condition, as these were most central to our hypotheses.

A key extension of Experiment 3 is that we included measures of behavioral intentions. Emotions are generally seen as involving action tendencies as part of their adaptive nature. The sociofunctional model (Neuberg & Cottrell, 2003) proposes that intergroup emotions lead to behavioral tendencies directly aimed at removing the intergroup threats that elicited the emotions. In contrast, we think that emotions lead to general behavioral intentions but that they are not necessarily linked to specific actions. If specific threats led directly to actions aimed at removing those specific threats, there would be no need for the mediating role of emotions (instead there would be relatively fixed action patterns in response to specific threats). Many emotion theorists (Frijda, 1986; Lazarus, 1991; Oatley & Johnson-Laird, 1987; Scherer, 1984) have argued that emotions evolved in order to provide general motivation and coordination of the individual's actions precisely because fixed action patterns do not function well in complex and unpredictable environments.

In line with these arguments, we wanted to include general behavioral intentions that were relevant for women's reactions to Muslims. Because fear and disgust are associated with avoidance tendencies (Frijda,

Kuipers, & ter Schure, 1989; Lazarus, 1991), we thought that approach-avoidance reactions would be most relevant here. We thus included a scale tapping avoidance intentions and another one tapping intentions for social contact with Muslims. We predicted that there would be stronger intentions to avoid and weaker intentions for social contact in the woman social identity condition.[3]

A last change in comparison with Experiments 1 and 2 was that participants' level of ethnocentrism was measured as a control variable. Ethnocentrism is a general negative evaluation of immigrants and other cultures (of which Muslims are the most visible in Belgian society) and is likely to be related to perceived threat and emotions toward Muslims. Including ethnocentrism as a covariate controls for relevant preexisting interindividual differences (ethnocentrism was measured before the social identity manipulation) and thus reduces sampling error.

Method

Procedure. Eighty-four female Belgian, French-speaking students at the Catholic University of Louvain filled out a questionnaire in exchange for course credit. Participants took part in groups of one to five persons and were randomly assigned to the personal identity (42) or the woman identity (42) condition. When participants arrived at the laboratory, they were seated in front of a computer. After completing the ethnocentrism scale, participants were given the social identity manipulation. They then answered a series of appraisal and emotion scales. Participants then performed a reaction time task for a different study and ended with a series of behavioral intentions scales. Within each block (appraisals, emotions, and behaviors) the items were presented in a random order.

Social identity manipulation. Participants were randomly assigned to one of two social identity conditions. In the woman condition, participants learned that we were interested in the differences in opinions between men and women, and they subsequently answered 11 questions about their identification with women. In the personal identity condition, we told participants that we were interested in individual differences in opinions, and we asked them to answer six questions about their identity as a unique individual.

Ethnocentrism. A six-item scale ($\alpha = .69$) measured participants' general positive or negative attitude toward immigrants (for a similar scale, see Welkenhuysen-Gybels, Billiet, & Cambré, 2003).

Dependent variables. We included the same seven appraisal scales as in Experiment 2, each of them measured by two items: threat to personal rights and freedoms ($r = .62$), threat to group values ($r = .49$), threat to physical safety ($r = .46$), threat to reciprocity because of inability to reciprocate ($r = .41$), threat to moral standing ($r = .61$), threat to health ($r = .67$), and threat to trust relations ($r = .67$).

The questionnaire further contained five emotion scales, three of them comprising two items: anger ($r = .64$), fear ($r = .77$), and guilt ($r = .52$). The pity ($\alpha = .68$) and disgust ($\alpha = .76$) scales had three items.[4]

Finally, there were two behavioral tendency scales (see Appendix B for all items). We measured avoidance of Muslims ($r = .72$) and intentions for social contact with Muslims ($\alpha = .68$). The means and standard deviations (by condition) of all dependent variables are reported in Table 5.

Results

Appraisals. We used all appraisal scales as the criterion in a series of regression analyses. The social identity condition (personal $= -1$, woman $= 1$) and the participant's level of ethnocentrism were the independent variables.[5] Women in the woman condition perceived stronger threat to personal rights and freedoms, physical safety, group values, trust relations, and health (see Table 5).

Emotions. We analyzed the emotions using the same model as for the appraisals (see Table 5). We used each emotion as dependent variable in a regression analysis as stated previously. Results showed that our female participants in the woman condition reported feeling more fear and disgust and marginally more anger than those in the personal identity condition (see Table 5).

Behavioral tendencies. The impact of our social identity manipulation on behavioral tendencies was tested in the same regression analyses as those used for

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[3]For exploratory reasons, we also measured the intergroup behavioral tendencies from the BIAS map (Cuddy et al., 2007): active harm, passive harm, active facilitation, and passive facilitation. There were no statistically significant effects of the social identity manipulation for these measures.

[4]Note that Experiment 3 was conducted in French, whereas Experiments 1 and 2 were run in Dutch. A preliminary study in French showed that the translation of the two-item scale for disgust was not reliable, which is why we added a third item.

[5]Ethnocentrism had a significant effect on most appraisals, emotions, and behavioral intentions, but because it is only a control variable we do not discuss these effects here.

TABLE 5
Dependent Variables in Experiment 3

	Personal Identity	Woman Identity	Standardized Regression Coefficient
Threat appraisals			
Personal rights and freedoms	2.69 (1.54)	5.08 (2.23)	0.60***
Physical safety	2.42 (1.42)	3.40 (1.92)	0.37***
Group values	3.79 (2.01)	4.79 (2.08)	0.33***
Reciprocity (inability)	3.08 (1.77)	2.82 (1.61)	0.01
Moral standing	4.79 (2.24)	3.77 (1.95)	−0.24*
Trust relations	1.68 (1.01)	2.43 (1.68)	0.35***
Health	1.44 (0.88)	2.15 (1.54)	0.33**
Emotions			
Anger	2.80 (1.72)	3.20 (1.92)	0.19†
Fear	3.48 (2.00)	4.00 (2.20)	0.22*
Disgust	2.13 (1.17)	2.60 (1.64)	0.26**
Guilt	2.54 (1.62)	2.48 (1.60)	0.02
Pity	2.61 (1.73)	3.24 (1.86)	0.21†
Envy	2.02 (1.28)	1.82 (1.17)	−0.10
Admiration	4.02 (1.69)	3.89 (1.59)	−0.09
Contempt	2.14 (1.65)	2.02 (1.80)	0.07
Behavioral intentions			
Avoidance	2.69 (1.52)	3.21 (2.22)	0.21*
Intentions for social contact	6.58 (1.55)	6.84 (1.63)	−0.01

Note. Columns 2 and 3 present the means (standard deviations between brackets) for all dependent variables, by condition. The third column reports the standardized regression coefficient for the effect of the social identity manipulation (coded −1 for control and 1 for the woman condition), controlling for ethnocentrism.
*$p < .05$. **$p < .01$. ***$p < .001$. †$p < .10$.

appraisals and emotions (see Table 5). In accordance with our predictions, participants in the woman condition had stronger intentions to avoid Muslims than participants in the personal condition. However, they did not show weaker intentions for social contact with Muslims.

Mediational analyses. We conducted the same mediational analyses as in Experiment 1 and 2. We used the five appraisals that were significantly higher in the woman condition as possible mediators in a multiple mediation model (Preacher & Hayes, 2008). When adding the mediators to the model, the effect of social identity condition on anger, fear, and disgust disappeared (all $ps > .48$). The results for *fear* were very clear as threat to physical safety was the only threat through which there was a significant indirect effect (0.48, $p < .01$). Moreover, this indirect effect was significantly stronger than each of the four other indirect effects (all $ps < .05$). For *anger*, threat to group values had the only significant indirect effect (0.20, $p < .05$), although threat to trust relations had a marginally significant indirect effect (0.13, $p < .10$). The indirect effect through physical safety found in Experiment 1 was not replicated in

Experiment 3. The only significant mediator for the social identity effect on *disgust* was threat to trust relations (0.24, $p < .01$). The indirect effect through threat to group values found in Experiment 1 was not replicated in Experiment 3.

We also tested whether the effect of the social identity manipulation on avoidance was mediated by anger, fear or disgust in a multiple mediator model (Preacher & Hayes, 2008). The effect of social identity on avoidance dropped from 0.41 to 0.08 when the emotions were added to the model. Only the indirect effect through fear was significant (0.15, $p < .01$).

Discussion

Experiment 3 nicely replicated the effects found in Experiments 1 and 2. Given that Experiment 3 was run in the context of a well-controlled laboratory setting, such a replication sends a most reassuring message with respect to the validity of our earlier conclusions. As predicted, appraisals and emotions relevant to the woman social identity were stronger when the woman identity was made salient than when the personal identity was made salient. Mediational analyses for fear were consistent with Experiments 1 and 2, as the effect of social identity on fear was clearly mediated by threat to physical safety. The results for disgust were somewhat surprising as only the threat to trust relations mediated the social identity effect on disgust, and not the threat to group values as was expected.

Participants in the woman identity condition also reported stronger intentions to avoid Muslims. The effect on avoidance was mediated by fear, which is consistent with theoretical expectations derived from appraisal theories (Frijda et al., 1989; Lazarus, 1991).

GENERAL DISCUSSION

We had two main goals in mind when we launched this research. First, we wanted to test whether changing the salience of a particular social identity for the perceiver (or subject) would influence emotions without at the same time changing the ingroup or outgroup status of the target (object) of the emotions. Second, and this constitutes the main novel contribution of this article, we wanted to investigate the role of appraisals of the intergroup situation in this effect on group-based emotions. We did this by assessing appraisals of group threat and investigating their links to emotions.

The Effect of Social Identity on Emotions

Our three experiments provide strong support for the idea that changing the salience of a particular social

identity influences relevant appraisals and group-based emotions. They showed that when their identity as a woman was experimentally made salient, young women reported more intense fear, disgust, and anger toward Muslims and also reported stronger appraisals of some specific group threats emanating from Muslims and relevant to women (especially threat to personal rights and freedoms and threat to physical safety). We assume that this was the case because contextual salience of the woman identity led to a relative activation of this social identity among our participants, increasing the relevance of specific threats and resulting in a process of emotional appraisal.

In accordance with appraisal theories (Scherer, Schorr, & Johnstone, 2001) and with the sociofunctional model of group-based emotions (Neuberg & Cottrell, 2003), the effects of social identity on group-based emotions were fully mediated by the threat appraisals. In Experiment 3, making salient the woman identity also led to stronger intentions to avoid Muslims. In our opinion, these studies provide good evidence that the salience of a particular social identity can change how people think, feel, and maybe act.

The finding that social identity salience affects group-based appraisals and emotions suggests a strategy of changing intergroup relations without changing the situation itself or recategorizing two groups in a common ingroup. One can simply make salient a social identity that entails a positive or unproblematic relationship with the target group. This will then lead to equally positive or unproblematic group-based appraisals and emotions toward the other group. Examples of such groups might be occupational groups, as these seldom have conflictual relations with other groups.

An alternative explanation for the effect of social identity on emotions could be that making salient the woman identity might not only have changed the identity of the participants but also the identity of the target group. It is possible that our female participants in the woman identity condition thought more about Muslim men than Muslim women and that this change in the target group explains their stronger appraisals and emotions (because, e.g., men are seen as more aggressive or threatening). This is a crucial issue, as we specifically set out to test whether changing the social identity of the subject of the emotion could influence these emotions without changing the group membership of the target group, and in this respect the studies presented here differ from most earlier work looking at the effect of social identity salience on emotions and behavior (Dumont et al., 2003; Gordijn et al., 2006; Levine, Prosser, Evans, & Reicher, 2005; Yzerbyt et al., 2003). Indeed, data from Experiment 2 explicitly indicate that no recategorization of the Muslim target group (into Muslim men vs. Muslim women) took place as a consequence of the

social identity manipulation. This means that, as we intended, our manipulation changed the identity only of our participants and not of the target group of the emotions.

In line with our goal to manipulate social identity, the questionnaire in the woman condition repeatedly mentioned that we were interested in the participant's opinion *as a woman*. It could be argued that participants might not report what they are actually feeling in response to perceived group threats but what they think that women (would or should) feel in general. Robinson and Clore (2002) reviewed evidence showing that these so-called identity-related beliefs can indeed shape emotional self-report. Their analysis indicates that women are generally thought to feel more negative self-directed emotions such as shame and guilt and more positive other-directed emotions such as sympathy and empathy (Robinson, Johnson, & Shields, 1998; Tangney, 1990). If women's responses to the emotion items in the woman social identity condition were shaped by such general identity-related beliefs, then we should observe more sympathy, empathy, guilt, and shame in the woman condition as compared to the individual condition. Instead, we predicted that a different set of emotions would emerge in this condition. We can easily evaluate the merit of this alternative prediction by directly examining our data. In both Experiment 1 and Experiment 3, we measured guilt, shame, and sympathy. None of these emotions was stronger in the woman condition than in the control condition (all ps > .20).

The Role of Group-Based Appraisals for Group-Based Emotions

Apart from showing that manipulating a particular social identity can lead to a change in emotions, we also wanted to provide evidence for the role of group-based appraisals in this process. Specifically, we predicted that the social identity effect on emotions would be mediated by relevant appraisals. This is an important issue because it shows the conceptual similarity between individual and group-based emotions. According to appraisal theories, emotions are caused by appraisals (Scherer et al., 2001). It then seems logical that group-based emotions are caused by group-based appraisals.

We used the intergroup threats from the sociofunctional model (Neuberg & Cottrell, 2003) as group-based appraisals that could possibly mediate the effect of social identity salience on emotions. In our studies the proposed link between threat to physical safety and fear was especially clear. Threat to physical safety was the best mediator for the effect of social identity on fear in Experiments 1 to 3. In Experiments 2 and 3 the indirect effect through threat to physical safety was even

significantly stronger than the other indirect effects. There is thus strong support for the specific relation between threat to physical safety and fear. The pattern was more complex for anger and disgust. Threat to group values mediated the social identity effect on disgust in Experiment 1, but it mediated the effect on anger in Experiment 3. Threat to trust relations mediated the effect on anger in Experiment 1 and 3 and additionally mediated the effect on disgust in Experiment 3. For the case of anger and disgust, we thus find that the specificity of the relations between threats and emotions is less clear than argued in the sociofunctional model and that there seems to be overlap between threat to group values, threat to trust relations, anger, and disgust. One way of interpreting this would be that anger and disgust are both other-condemning moral emotions (see Haidt, 2003) that result from similar intergroup threats in the specific intergroup relation used in our studies.[6] It must also be noted that anger is related to almost all intergroup threats in the model. Despite the overlap between anger and disgust and the differences between studies, it is clear that fear results from different threat appraisals than anger or disgust, supporting the idea of specific threats leading to specific emotions. We can thus conclude that appraisals of intergroup threat (and thus group-based appraisals more generally) can play an important role in group-based emotions.

The Sociofunctional Model

Our results are generally compatible with the sociofunctional model (and the appraisal theories from which it is derived) in that they show that group-based appraisals play an important role in group-based emotions. However, the present findings also stress the importance of social identity and self-categorization (Turner et al., 1987), an issue that was not taken into account by the sociofunctional model. The sociofunctional model focuses only on appraisals as determinants of group-based emotions. However, original conceptions of group-based emotions stressed the importance of both appraisals and social identity as crucial elements (Smith, 1993, 1999). Although it can be argued that the salience or presence of an outgroup (as a *target* or *object* of emotions in the sociofunctional model) inherently implies activation of a social identity, the studies presented here show that social identity ought to be taken into account more explicitly as part of the model, by changing the salience of a particular social identity for the *subject* of the emotions (for a discussion of this issue, see also Iyer & Leach, 2008; Parkinson et al., 2005). We therefore believe that the sociofunctional model and self-categorization theory can and should be integrated. As

such, incorporating self-categorization theory adds flexibility to the model. Even when the objective situation is the same, the salient social identity may still have a major impact on appraisals and emotions (Yzerbyt & Demoulin, 2010).

Future Directions

Ideally, future studies should examine whether changes in social identity are likely to affect actual behavior, beyond appraisals, emotional reactions, and behavioral intentions. One fruitful line of research would consist in better identifying specific conditions under which people may function as group members and therefore prove sensitive to a group-level interpretation of the situation. In all likelihood, people may be more likely to experience group-based emotions when the need for affiliation is high rather than low. Also, some individuals may prove more sensitive than others to situational variations. For instance, high self-monitors may be more prone than their low-self monitor counterparts to fluctuations as a function of the contextually driven identities. We hope that research conducted in our laboratory as well as the work by others will shed light on these issues before long.

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[6]We thank an anonymous reviewer for suggesting this.

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APPENDIX A
CONSTRUCTION OF THREAT APPRAISAL SCALES

Threat to Personal Rights and Freedoms

Muslims limit the personal freedoms of people like me
Muslims restrict the personal rights of people like me

Threat to Group Values

Muslims hold values that conflict with the values of people like me
The values of Muslims threaten the way of life of people like me

Threat to Physical Safety

Muslims threaten the physical safety of people like me
Muslims are physically dangerous to people like me

Threat to Reciprocity Because of Inability to Reciprocate

Muslims are not able to give as much as they take from people like me (Experiment 1)
Muslims need to take more from people like me than they are able to give back (Experiment 1)
Muslims cannot contribute as much to society as people like me (Experiment 2 and 3)
Compared to people like me, Muslims need to take more from society than they can give back (Experiment 2 and 3)

Threat to Moral Standing

Muslims make me think about the bad way in which people like me have treated Muslims
Muslims make me think about how people like me have discriminated them

Threat to Health via Contagion

Muslims increase the risk of physical illness of people like me
Muslims threaten the medical health of people like me

Threat to Trust Relations

People like me can not trust Muslims
Muslims can not really be trusted by people like me

Note. These are the items for the no identity (Experiment 1) or personal identity (Experiment 2 and 3) condition. In the woman identity condition, the words "people like me" were always changed into "women like me." The same was done for the young adult identity condition (Experiment 1) and the social sciences student identity condition (Experiment 2).

APPENDIX B
CONSTRUCTION OF THE BEHAVIORAL TENDENCY SCALES (EXPERIMENT 3)

Avoidance

Avoid Muslims
Keep my distance from Muslims

Intentions for Social Contact

Have a chat when a Muslim talks to me on the street
Dance with Muslims (at a party or disco)
Befriend Muslims