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Not Quite Human: Infrahumanization in Response to Collective Responsibility for Intergroup Killing

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The present research examines how awareness of violence perpetrated against an out-group by one's in-group can intensify the infrahumanization of the out-group, as measured by a reduced tendency to accord uniquely human emotions to out-groups. Across 3 experiments that used different in-groups (humans, British, White Americans) and out-groups (aliens, Australian Aborigines, and Native Americans), when participants were made aware of the in-group's mass killing of the out-group, they infrahumanized the victims more. The perception of collective responsibility, not just the knowledge that the out-group members had died in great numbers, was shown to be necessary for this effect. Infrahumanization also occurred concurrently with increased collective guilt but was unrelated to it. It is proposed that infrahumanization may be a strategy for people to reestablish psychological equanimity when confronted with a self-threatening situation and that such a strategy may occur concomitantly with other strategies, such as providing reparations to the out-group.

Keywords: collective responsibility, infrahumanization, dehumanization, intergroup conflict, collective guilt

In answering his own question about the nature of nationhood, French historian Ernest Renan (1882) contended that its essence lay in the similarities among citizens, both in terms of what they are and in terms of what they are to forget. Nations, he argued, were certainly built on a glorious shared past that needed to be celebrated, but they were also built on the collective forgetting of the negative events that inevitably characterize the history of every nation. Because the nation is, in part, an imagined community (Anderson, 1991), such selective forgetting is needed to develop and maintain national identification and loyalty.

But what happens when individuals are unwillingly reminded of what they want to forget about their in-groups—in particular, when they are reminded of atrocities committed by the in-group toward an out-group? Even in the early 21st century, this question is still evoked by the events of the Second World War, as is witnessed by the polemic in early 2005 between Japan and China over the recognition of Japanese wartime atrocities. Few, indeed, are the nations since 1945 that have not been affected by war crimes either as victims or as perpetrators.

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Recent research has suggested that reminders of negative in-group actions can elicit emotional responses that benefit the out-group: guilt, for example, followed by reparations. Notwithstanding these findings, we argue that particularly when massacres and genocides have occurred, such reminders may also lead to much less appealing outcomes. Building on the literature on violence and dehumanization, we claim that after being made aware of atrocities for which their in-group is responsible, individuals may derogate the victims of such actions by developing the implicit belief that they are not fully human, particularly in terms of the emotions they are capable of feeling. We report findings from several studies supporting our claim and show that this phenomenon can happen even alongside the more prosocial outcomes of guilt and reparation.

Reactions to Reminders of In-Group's Past Wrongdoings

In recent years social psychological research has devoted considerable attention to the topic of intergroup emotions, and empirical evidence stemming from this research clearly shows that individuals can experience emotions "on behalf of" their in-group (for a review, see Mackie & Smith, 2002). Yzerbyt, Dumont, Wigboldus, and Gordijn (2003), for instance, showed that when people perceive victims of harmful behavior as belonging to their group, they feel more anger, and this anger increases their intentions to ameliorate the situation.

Some of this research has also looked at what happens when individuals are confronted with the problematic past of their own in-group. After measuring the extent of Dutch students' identification with the Netherlands, Doosje, Branscombe, Spears, and Manstead (1998) presented them with different accounts of the Dutch colonization of Indonesia. The accounts either depicted such colonization in entirely negative or entirely positive terms or they were ambiguous (Doosje et al., 1998; Study 2). Participants felt higher levels of collective guilt when confronted with a clearly negative account of their own in-group's past behavior toward an

out-group, and this translated into more willingness to provide reparations. It is interesting that when the account was ambiguous, high identifiers showed this tendency to a much lesser degree than low identifiers, possibly because they were motivated to avoid the unpleasant emotion of guilt.

In more recent research, Iyer, Leach, and Crosby (2003) have shown that Caucasians' perceptions of collective in-group *responsibility* for ongoing discrimination, and not merely historical "guilt by association," result in feelings of compunction and reparative tendencies toward African Americans in the United States (see also Esses & Dovidio, 2002). Other evidence suggests that group members may use various strategies to avoid feeling guilty. In a study investigating the relationship between Israelis and Palestinians, Roccas, Klar, and Liviatan (2004) found that, among Israelis, endorsement of statements minimizing an injustice's harmfulness and the in-group's responsibility was negatively related to guilty feelings. This result is consistent with the argument that collective guilt is infrequently felt in practice, in part because of a defensive strategy of "avoidance through distance" (Iyer, Leach, & Pedersen, 2004, p. 274)

Although there is little doubt that collective guilt sometimes emerges when people are reminded of the misdeeds of their group (cf. Branscombe & Doosje, 2004), this may not be the only psychological consequence among people who are reminded of their group's wrongdoings. In particular, when reminders point to atrocities and massacres perpetrated by one's in-group, we argue that in-group members may deny fully human status to the victims. This prediction is based on extensive evidence that violence toward other human beings goes hand in hand with their dehumanization.

Violence and Dehumanization

In the wars of the last century, and in their attendant genocides and massacres, observers have often noted the ease with which propaganda denied the enemy fully human status (Dower, 1987; Fussell, 1989; Keen, 1986). Primo Levi, a survivor of Nazi concentration camps, observed that the degradation imposed on the prisoners was not a matter of cruelty, but a necessary process. For those operating the gas chambers not to be overwhelmed by distress, victims had to be reduced to subhuman objects beforehand (Levi, 1981). And, in reviewing the psychology of killing in warfare, Grossman (1995) listed dehumanization of the enemy as one of the ways in which combat infantry soldiers prepare themselves to overcome a normal, innate human repugnance at killing other humans. An account from an American soldier in the Vietnam War (Boyle, 1972) exemplifies this phenomenon: "You are trained 'gook, gook, gook' [derogatory nickname for Vietnamese] and once the military has got the idea implanted in your mind that these people are not humans, they are subhuman, it makes it a little bit easier to kill 'em" (p. 141).

These anecdotal observations find support in psychological theory. Bandura (1990a) suggested that perceiving another person as human activates empathetic reactions that would make it difficult to mistreat him or her without risking personal distress. Once the other is dehumanized, however, such self-sanctions for mistreatment can be disengaged. Classic as well as recent research has demonstrated that dehumanization of a target both increases aggressive behavior and is related to other aspects of moral disengagement (e.g., Bandura, Caprara, Barbaranelli, Pastorelli, & Regalia, 2001; Bandura, Underwood, & Fromson, 1975; Turner, Layton, & Simons, 1975). Dehumanized group members are excluded from the moral community; one feels no obligation to apply moral standards that are reserved for the fully human to them (Bar-Tal, 1990; Kelman, 1973; Opotow, 1990; Staub, 1987, 1990).

If it is true that denying others fully human status facilitates violence against them, it may well be that individuals would use the same disengagement strategy when reminded that their own group has used violence against an out-group. Reprising the arguments of Bandura (1990a) on a collective level, if mistreatment has been perpetrated by one's self or one's group, empathy toward the victim must be reduced to diminish self- or in-group-directed moral distress or to avoid it in the first place. In other words, we may have killed them, but if they are "like animals," then surely we should not feel so bad about our actions. Crucially, this process is not merely a cognitive one of associating people who die in large numbers with animals. Neither is it a general process similar to "just-world" motivations (Lerner, 1980), in which people dehumanize victims to downplay the mere fact of large-scale human mortality. Rather, this theoretical position traces dehumanization to collective self-defensive processes. If the in-group is not seen as responsible for the killing, dehumanization will not occur as strongly.

Blatant dehumanization, the explicit endorsement of the belief that victims are not human, seems unlikely to occur among people who, despite their association with the perpetrators, are removed either temporally or spatially from the actual wrongdoing. Antiracist norms in modern Western society, for the great majority of its citizens, also work against explicit endorsement of truly dehumanizing beliefs. Rather than engaging in blatant dehumanization, such group members who are reminded of atrocities committed by their in-group may instead implicitly perceive the victims as *infrahuman*.

A Lesser Form of Dehumanization: Infrahumanization

Infrahumanization, as the term suggests, refers to the denial to an individual or group of some of the characteristics that make us human, rendering the target less than human, if not wholly nonhuman. One of these characteristics, Leyens et al. (2000) have argued, is the capacity to feel *secondary* emotions. Examples of secondary emotions include love, guilt, humiliation, and hope, whereas pleasure, anger, fear, and attraction are considered primary emotions. Although both primary and secondary emotions can have positive or negative valence, primary emotions are judged as equally characteristic of humans and animals, whereas secondary emotions are considered uniquely human emotions (Demoulin, Leyens, et al., 2004). Secondary emotions, therefore, join intelligence and language in defining "the human essence" (Leyens et al., 2000). This observation is embedded within a theory of intergroup relations stating that people perceive social groups in essentialistic terms (cf. Yzerbyt, Rocher, & Schadron, 1997) and that they reserve the human essence for their own in-group. Numerous studies since then have demonstrated the phenomenon of intergroup infrahumanization and linked it to the theory of essentialism (for a review, see Demoulin, Rodriguez, et al., 2004).

In a first test of this hypothesis, Leyens et al. (2001; Experiment 1) provided participants with lists of positive primary and secondary emotions and asked which of these emotions they considered characteristic of in-group members or out-group members. Sec-

ondary emotions were selected more often for the in-group than for the out-group, suggesting an out-group infrahumanization tendency. The results were replicated in a second experiment that used both negative and positive emotions (Leyens et al., 2001; Experiment 2) and showed that individuals perceive, for example, the secondary emotions of humiliation and guilt to be as typical of their in-group as hope and love. Similarly, they are ready to concede to the out-group positive primary emotions like pleasure and attraction in addition to anger and fear. Therefore, the differential attribution of the capacity to feel these two kinds of emotions is not a matter of the simple association of good feelings with the in-group and bad ones with the out-group. Rather, it is a subtle measure of the infrahumanization of the other.

Further studies yielded additional evidence for out-group infrahumanization. Stronger mental associations between secondary emotions and the in-group compared with the out-group emerged in experiments that used either a process-dissociation procedure (Gaunt, Leyens, & Demoulin, 2002) or the implicit association task (Paladino et al., 2002). Recent findings also have shown that in-group members displaying secondary emotions are treated better but that the reverse is true for out-group members displaying secondary emotions, suggesting a normative aspect of this phenomenon in addition to a descriptive one (Vaes, Paladino, Castelli, Leyens, & Giovanazzi, 2003).

Infrahumanization effects may not be ubiquitous. For instance, French-speaking Belgians infrahumanized Flemish-speaking Belgians but not Parisians or inhabitants of Prague (Cortes, Demoulin, Rodriguez, Rodriguez, & Leyens, 2005; Experiment 3). Similarly, participants from the Canary Islands infrahumanized Spanish mainlanders but not Poles or Hungarians (see Leyens et al., 2003), whereas Belgian participants infrahumanized Poles (a not-very-relevant out-group) only when perception of competition between the two groups was artificially enhanced in an experimental setting (Cortes, 2005). This suggests that for infrahumanization to occur, the out-group must be relevant to the in-group in some way. This line of reasoning found confirmation in a study that used the minimal group paradigm in which infrahumanization did not appear when groups were manifestly formed on a random basis but did appear when they were formed on alleged preferences for colors or career paths (Demoulin et al., 2002). In this latter study, the perceived essentialism of the group distinction also mediated the group bias effect on infrahumanization, providing direct evidence for a main tenet of Leyens et al.'s (2003) infrahumanization model, that the observed bias in emotion attribution is related to essentialism. According to this model, the human essence is constituted of a series of characteristics, among which is the capacity to feel secondary emotions. In many cases, as shown by the findings summarized above, this essence is reserved for the in-group, and out-group members are thus perceived as lacking it; they are infrahumanized.

The Effects of Violence on Infrahumanization

The model of infrahumanization reviewed above suggests that individuals often deny others the same human essence that is thought to characterize their own in-group. Such a process reaches an extreme in conflict between the in-group and the out-group. In wars and other overt, violent conflicts, history has shown that not just infrahumanization but outright dehumanization occurs. Enemy groups receive animalistic epithets that leave very little to the imagination and are depicted in propaganda art as bestial, subhuman hybrids (Fussell, 1989). Although perpetrators and individuals experiencing the conflict firsthand may engage in such an overt process of dehumanization of the other, we argue that even at a spatial or temporal remove from the events, and even under the influence of norms that prevent explicit dehumanization, persons associated with the perpetrators via social identity may use a much more subtle and largely implicit process, namely infrahumanization of the victims.

We thus hypothesized that when individuals are presented with reminders of violence against the out-group for which their own in-group is held responsible, they infrahumanize the victim more than when such reminders are not included or than when such reminders merely present the fact of large-scale death without in-group responsibility. To test this basic hypothesis, we conducted an initial experiment followed by two others that replicated the basic effect in diverse types of scenarios while testing potential alternative and mediating explanations for the effect that was found.

Overview of the Experiments

Research on infrahumanization has characteristically focused on the extent to which primary and secondary emotions are differentially attributed to the in-group and the out-group. Specifically, participants have been asked to attribute to the two groups a series of emotions, some of which were categorized as primary or secondary on the basis of normative studies assessing the extent to which the emotions were considered uniquely human (Demoulin, Leyens, et al., 2004; Study 1). The measure of infrahumanization thus consisted of the extent to which emotions categorized as secondary, relative to those categorized as primary, were attributed to the in-group compared with the out-group.

Our approach to infrahumanization differs in two ways. First, because of the focus of our hypotheses, we compared how the out-group is perceived in different conditions rather than how the in-group compared with the out-group. Second, our analytic method represents an advance in sophistication, moving from a dichotomous classification of emotions as primary versus secondary to a method more in line with recent conceptual advances treating the humanity of emotions as a continuum (cf. Demoulin, Leyens, et al., 2004, p. 91; Vaes et al., 2003, p. 1017). Instead of comparing average levels of attribution of discretely categorized emotion types, we used the extent to which they are typically considered as uniquely human, that is, their degree of humanity, as a continuous predictor of the extent to which they are attributed to a group. Furthermore, given that normative data for valence as well as humanity of each emotion are also available, we likewise statistically controlled the impact of this other dimension in a continuous rather than dichotomous way.

This strategy led us to use a large number of emotional attributions as dependent variables rather than, as in previous research, a select few emotions that are very low or very high in humanity. In terms of this methodology, our general prediction was that the humanity of the emotion would more strongly and negatively predict attribution in the condition in which the in-group was responsible for the killing of a large number of out-group members. In other words, our measure of infrahumanization is a decline in attribution as the humanity of the emotion increases rather than

a reduction in attribution of a few categorically secondary emotions.

In all three studies, therefore, humanity and valence normative scores were included in the data files and considered as continuous within-participant predictors of emotion attribution. The experimental condition was also included as a factor in the model, which tested for all main and interaction effects. In all studies, we expected that the effect of humanity would be moderated by the experimental condition such that humanity would be a stronger predictor in the condition in which the in-group was responsible for the killing of out-group members.

Experiment 1

Experiment 1 explored reactions to an imaginary scenario. The groups involved in the scenario were humans (unquestionably the in-group for our participants) and extraterrestrial aliens. Although the imaginary aliens are obviously nonhuman to some degree, popular science fiction entertainment gives a precedent for projecting a wide range of humanity onto extraterrestrial beings—on the one hand, the quasihuman crew members of the various *Star Trek* series with their complex emotional problems and, on the other hand, the complete inscrutability of the same series' intelligent gas clouds and rock formations. Another potential benefit of using alien scenarios is that they combine freedom from preconceptions about the group with the possibility of presenting a plausible reason for deadly conflict between the groups. For these reasons, aliens have been successfully used in previous experimental research on group perception (e.g., Dasgupta, Banaji, & Abelson, 1999).

We argue that stronger infrahumanization of the out-group occurs because the in-group members want to somehow disengage the self-sanctions that are likely to occur in such circumstances. Should the in-group bear no responsibility for the death of out-group members, however, no enhanced infrahumanization should occur. These predictions are different from predictions that one could make on the basis of the just-world hypothesis—according to which individuals may derogate victims to maintain a belief that in this just world everyone gets what he or she deserves—rather than on the basis of avoiding self-sanctions. Accordingly, the main goal of Experiment 1 was to ascertain whether participants reading about in-group responsibility in the killing of out-group members would infrahumanize that out-group more than participants who read about an identical number of deaths but without such responsibility.

The experiment comprised two conditions. In one condition, the in-group was responsible for killing a large number of out-group members (10,000), whereas in the other condition out-group members died in equal numbers, but as a consequence of an accident at a joint mining station. The presentation of large-scale deaths in both conditions allowed us to rule out the possibility that stronger infrahumanization might simply follow from a desire to maintain just-world beliefs or to reduce other-directed distress at the aliens' suffering.

On the basis of previous research showing infrahumanization of out-groups (e.g., Paladino et al., 2002) and because of the very nature of the out-group, which was by definition nonhuman, we expected that overall a decline in the attribution of emotions would be observed as a function of the emotion's humanity. In other words, infrahumanization should emerge overall. More crucially, a stronger degree of infrahumanization was expected in the in-group responsibility condition compared with the condition in which aliens died because of an accident. That is, we expected an interaction effect between the condition and the level of humanity of the emotion in predicting emotional attribution scores.

Method

Participants

Sixty-eight undergraduate students at the University of Kent at Canterbury in England took part in the experiment in exchange for credit.

Procedure and Materials

After giving consent, participants sat in front of a computer in a laboratory cubicle and received instructions on how to get started. The experimenter waited outside the cubicle, but she remained available if at any time the participant needed help.[1]

After a few welcome screens, participants were told that they were participating in a pilot experiment on how characters of a science-fiction movie would be perceived. In the scenario, humans had encountered an alien species called the Gs. A brief description of them followed, together with a picture. Depending on the condition, the remaining part of the story varied. In the accidental-death condition, the plot of the movie was that 10,000 aliens were killed as a consequence of an explosion on the moon during a mining operation. The mining operation was a joint venture of humans and aliens, but according to the story, all the humans were away for Christmas when the explosion occurred. In the in-group–responsibility condition, participants read that the aliens had been the target of an attack by a human military division on the moon. The attack, participants were told, caused 10,000 casualties among the Gs but only a few casualties among the humans.

After reading this information, participants were told that we were interested in how they perceived the aliens and, to that end, that they would be required to indicate "the extent to which you believe the Gs, in general, are likely to feel the given emotion." They were then presented with a series of emotions, one at a time, and asked to indicate their answer by clicking on a scale from 1 (*not at all*) to 5 (*very much*) that appeared next to the emotion. The series comprised 59 of the 65 emotions presented in Demoulin, Leyens, et al. (2004). As in the original series, humanity and valence of the emotions did not correlate ($r = .05$).

Once they completed the emotion-attribution task, participants were asked whether humans were responsible for the death of the 10,000 aliens. Once they had finished, we thanked participants for their participation, explained the goal of the experiment, checked them for suspicion, and dismissed them. None of the participants reported any suspicion regarding the cover story.

Results

Our hypothesis predicting stronger infrahumanization in the intentional-killing condition was based on the assumption that, in this condition, participants would feel responsibility because their group was the cause of the death of the 10,000 out-group members. In the accidental-death condition, we expected that such feelings of responsibility would be much less likely to emerge. The success of this manipulation was confirmed by a significant chi-square, $\chi^2(1, N = 68) = 17.10$, $p < .01$, for the table crossing these two

[1] All experiments presented here were carried out using Medilab Software (Jarvis, 2002).

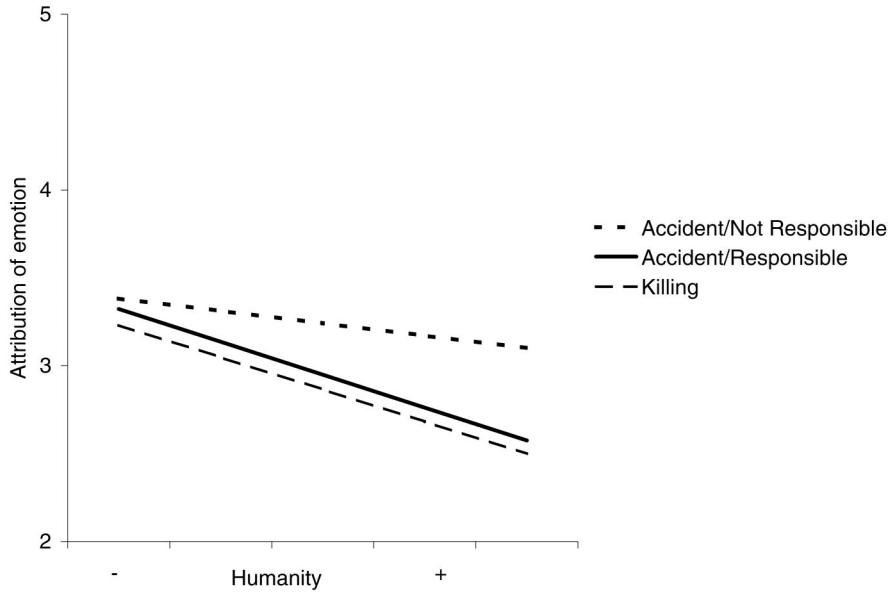

Figure 1. The effect of emotion humanity on attribution of emotions as a function of the experimental condition (Experiment 1). More negative values mean greater infrahumanization.

conditions with participants' answers to the dichotomous question concerning in-group responsibility (yes–no).

A look at the frequencies, however, indicated that whereas no participant in the in-group responsibility condition said that the in-group was not responsible (as expected), over 50% of participants in the accidental-death condition indicated that humans (the in-group) were responsible. Given that the perception of in-group responsibility for the deaths is considered a critical factor, we decided to split our accidental-death condition sample into two subsamples: those who perceived humans' responsibility and those who did not perceive humans' responsibility. This led to a three-level between-participants variable (killing vs. accident/responsible vs. accident/not responsible).

To analyze participants' estimation of the extent to which targets were likely to feel the given emotions, we used a mixed linear-modeling approach.[2] Such a model allows estimating the impact of categorical between-participants factors (e.g., condition) on the dependent variable in interaction with continuous variables that vary within-participant, such as the normative valence and humanity of the emotion terms judged. The specific model was thus a Condition (between-subjects, three levels) × Valence (within-subject, continuous) × Humanity (within-subject, continuous) design. For each of the 59 emotions participants rated, we inserted in our data set its corresponding level of humanity and valence as reported in Demoulin, Leyens, et al. (2004).[3] Entering all these predictors in the model allowed us to test whether the participants' attribution of the various emotions to the target was affected by how high or low each emotion normatively scored on the humanity and valence continua and, most crucially, whether the decline in attribution as a function of humanity was moderated by condition. Humanity and valence were centered before being entered into the model.

Among the main effects, humanity, $F(1, 3935) = 71.28$, $p < .01$, and valence, $F(1, 3935) = 6.03$, $p < .01$, came out significant, indicating that emotions were attributed less the higher their humanity ($\beta = -.11$) and the more positive their valence ($\beta = -.03$). These, however, were qualified by interactions. The expected Humanity × Condition interaction was close to significant, $F(2, 3935) = 2.68$, $p < .06$. This revealed that humanity predicted attribution (i.e., less human emotions were attributed to the aliens) more strongly in the killing ($\beta = -.15$, $p < .05$) and in the accident/responsible ($\beta = -.15$, $p < .05$) conditions than in the accident/not responsible ($\beta = -.05$, $p < .05$) condition (see Figure 1). In other words, attribution of emotions in the two former conditions diminished more than it did in the accident/not responsible condition as the humanity of the emotion increased. Whereas the killing and accident/responsible conditions did not differ from each other ($p > .40$), the accident/not responsible condition differed from the killing condition marginally ($p < .07$) and from the accident/responsible condition significantly ($p < .05$).

The two other two-way interactions were also significant. The Humanity × Valence interaction, $F(1, 3935) = 27.62$, $p < .01$,

[2] The MIXED Procedure in SAS Software (Version 9.1) was used to carry out these analyses.

[3] The English-speaking sample Demoulin, Leyens, et al. (2004) used was rather small ($N = 27$) and comprised only of North American participants. In light of the cross-cultural replications in Demoulin, Leyens, et al.'s study, we do not believe that the relatively small sample and the nationality of the English-speaking participants (two of the studies presented in this manuscript used British participants and one used North American participants) constitute a problem. Empirical evidence available is also reassuring (Castano & Giner-Sorolla, 2005). Data from a British–English sample ($N = 300$) on a subset (28) of the emotions reported by Demoulin, Leyens, et al. (65) revealed an impressive correlation with Demoulin, Leyens, et al.'s data for humanity ($r = .91$) and valence ($r = .98$). Data from a British–Scottish sample ($N = 70$) for 63 of the 65 emotions revealed equally high correlation with Demoulin, Leyens, et al.'s humanity ratings ($r = .91$). Valence ratings for the Scottish sample were not available.

revealed that humanity negatively predicted attribution of the emotions for negative (one standard deviation below the mean) and for neutral values of valence (mean; βs = −.19 and −.11, ps < .05, respectively) but was only marginally significant for positive ones (one standard deviation above the mean; $\beta = -.04$, $p < .06$). The Valence × Condition interaction, $F(2, 3935) = 140.97$, $p < .01$, showed that the more positive the emotion, the more it was attributed to the aliens in the accident/not responsible condition ($\beta = .19$, $p < .05$), whereas, in the killing condition, the more positive the emotion, the less it was attributed to the aliens ($\beta = -.33$, $p < .05$). In the accident/responsible condition, valence did not predict attribution significantly ($\beta = .01$, *ns*). Each condition differed significantly from the other two conditions (ps < .01).

The three-way interaction was also significant, $F(2, 3935) = 4.89$, $p < .01$. To probe this interaction, we checked for the significance of the Humanity × Condition interaction at negative (one standard deviation below the mean) and positive (one standard deviation above the mean) values of valence. The interaction was nonsignificant for positive values of valence, but it was significant for negative values, $F(2, 3935) = 6.90$, $p < .01$. For negative values, attribution of emotions decreased more strongly as the humanity of the emotion increased in the killing ($\beta = -.12$, $p < .05$) and in the accident/responsible ($\beta = -.15$, $p < .05$) conditions compared with the accident/not responsible ($\beta = -.07$, $p < .05$) condition. Whereas the two former conditions did not differ from each other ($p > .50$), both differed significantly from the latter condition (ps < .01). As continuous predictors were centered, the Humanity × Condition interaction at neutral values of valence would have been identical to the overall Humanity × Condition interaction. For negative and neutral but not positive emotions, therefore, the pattern was consistent with our hypothesis.

Discussion

The principal aims of Experiment 1 were to test whether stronger infrahumanization of the out-group would be contingent on the in-group being responsible for the killing of out-group members and to discriminate this effect from possible infrahumanization as a mere consequence of out-group members dying. Accordingly, the design comprised a killing condition and an accidental-death condition. Because a significant proportion in the latter condition perceived in-group responsibility, participants in this condition were split into two groups and the data were analyzed with a three-level between-participants factor. The pattern of results was consistent with expectations, with those who perceived in-group responsibility (either in the killing condition or the accidental condition) showing stronger infrahumanization than those who did not.

Because subjective understanding of in-group responsibility in the accidental condition varied among participants, we were able to assess the role of this critical factor among individuals who were presented with identical information, increasing our confidence that the factor is indeed an important moderator. However, given the fortuitous nature of this additional result, we thought it necessary to replicate this pattern with another experiment in which responsibility was less ambiguous to participants.

Furthermore, the moderating role of valence on the Humanity × Condition effect raised the question of whether the differential attribution of emotions was indeed due to infrahumanization or merely to increased estimates that the aliens in that situation were more likely to feel negative primary emotions such as fear or anger. We considered this possibility unlikely because of the presentation of the task as an estimate of the emotions the aliens were capable of feeling rather than actually feeling. Nevertheless, we felt it important to see whether this moderating effect of valence on infrahumanization characterized findings in another setting.

Another possible limitation in Experiment 1 was that the hostile or friendly nature of the relationship between in-group and out-group varied with the killing or the accidental death of the aliens. Once again, the finding of infrahumanization in the accidental death condition when responsibility was attributed seems to rule out an interpretation based purely on the quality of relations, but further empirical evidence was needed with respect to this issue. Two additional experiments were conducted to address the above issues and to explore correlates, moderators, and mediators of the infrahumanization effect.

Experiment 2

In Experiment 2, we wanted to move away from a hypothetical scenario and test our hypothesis using a real intergroup situation in which in-group members are reminded of their group's past behavior toward an out-group. Accordingly, Experiment 2 looked at the attribution of emotions to Australian Aborigines by British participants. There is little doubt that the life of Australian Aborigines was made difficult by the arrival of the British (e.g., Bruce, 2003), but it was also clear from informal discussion with British university students that there was little knowledge of the events of the early phases of the British colonization. This lack of precise knowledge let us manipulate perceptions of the extent and the causes of the diminished Aborigine population after the British arrival.

As in Experiment 1, we hypothesized that when confronted with evidence that the Aborigine population suffered heavy losses as a consequence of persecution and diseases introduced by the British, participants would show higher infrahumanization compared with participants confronted with an account of British colonization of Australia in which the loss of population was less. This scenario allowed us to keep the alleged relationship between the two groups constant, while varying the consequences of the British arrival on the indigenous population.

Experiment 2 also included measures of group identification and of collective guilt to allow us to examine the effects of these variables as mediators, moderators, or correlates both of the basic infrahumanization effect and of stronger infrahumanization as a result of awareness of in-group responsibility for killing. In Experiment 1, a certain level of identification of our participants with human beings was taken for granted. In Experiment 2, however, the subjective level of identification with the British was expected to vary, allowing us to test whether, because infrahumanization of out-groups is an intergroup phenomenon, it may be moderated by the participants' sense of identity.

Previous research on the role of identification on infrahumanization itself is scarce because the primary and secondary emotions paradigm has been proposed only recently (Leyens et al., 2000). Paladino, Vaes, Castano, Demoulin, and Leyens (2004) measured the level of identification with Italy among Italian students and the attribution of primary and secondary emotions to the in-group

(Italians) as well as to the out-group (Germans). Results from this experiment indicated that high levels of identification were associated with stronger attribution of secondary emotions to the in-group but had no effects on the out-group target. Conversely, high identifiers assigned more primary emotions to the out-group than did low identifiers.

Similarly, Demoulin et al., (2002) assessed identification with Britain among British participants and asked them to select from a list containing primary emotions, secondary emotions, and fillers those characteristics that they considered typical of British and of German people. The results indicated that identification moderates infrahumanization. Specifically, high identifiers attributed more secondary emotions to the in-group than to the out-group, whereas low identifiers did not show such a difference.

These data indicate hyper-humanization of the in-group by high identifiers rather than the infrahumanization of the out-group. However, it should be noted that the context of judgment was explicitly an intergroup one, and half of the participants rated the in-group before the out-group. As we know from research in self-categorization theory, the context of judgments is likely to have a strong impact on the results. In these circumstances, participants are more likely to express their preference for the in-group (be it in terms of simple in-group bias or perception of humanity) by implementing in-group favoritism as opposed to out-group discrimination (Mummendey, 1995). Overall, therefore, we thought it interesting to examine whether identification played a part in the out-group-centered infrahumanization measure we used.

We also considered it important to examine the relationship between infrahumanization, on the one hand, and overt collective guilt and reparations, on the other hand. Three possibilities presented themselves. First, the two tendencies might be separate responses to in-group responsibility for killing and have no relationship to each other. Second, collective guilt might accompany the realization that the victims are human, so that collective guilt holds a negative relationship to infrahumanization and respondents suppress its increased expression after learning of in-group complicity in a massacre. Third, infrahumanization may be a response to collective guilt that is less than totally effective in eliminating it, such that responses of guilt and reparations increase with implicit infrahumanization. If the last possibility were to hold true, collective guilt could also stand as a mediator of the relationship between killing and infrahumanization: Those who feel no guilt would not need to infrahumanize.

Method

Participants

Fifty-seven undergraduate students at the University of Kent at Canterbury took part in the experiment in exchange for course credit.

Procedure and Materials

After giving consent, participants sat in front of a computer in a laboratory cubicle and received instructions on how to get started. The experimenter waited outside the cubicle, but she remained available if at any time the participant needed help.

After a few introductory screens, participants read about the alleged goal of the experiment. The experiment was presented as cross-cultural with the aim of investigating how individuals perceive people from other cultures in emotional terms. Participants were told that a brief history of the Aborigines would be provided, allegedly to supply every participant with a basic knowledge of the culture under investigation.

This history started with a brief description of the everyday life of Australian Aborigines and then explained what happened after the arrival of the British colonizers. This part varied depending on the condition. In the high-impact condition, participants were told that the British were responsible for a dramatic decline in the number of Aborigines because of the diseases introduced by British settlers and their cattle and planned military campaigns they conducted against the Aborigines. In the low-impact condition, participants were told that although a decline in the number of Aborigines happened shortly after the arrival of the British, the number subsequently stabilized to a level similar to that prior to the arrival of the British.

Participants were then informed that the next task consisted of a study in the psychology of emotions across cultures. These instructions read:

> This study aims to show that people are pretty good in detecting what kind of emotions appear on people's faces, and therefore can tell, for various ethnic groups, which kind of emotions characterize them best. Even if you have never met Aborigines before, this is not important, since the study looks at expectations, rather than actual knowledge. We will present you with a series of emotions, and would like to ask you to what extent you think each of these emotions can be felt by Aborigines.

To shorten the experiment and ensure that participants were not bored and/or upset by the length of the task, 30 emotion words were used in this experiment. As in Experiment 1, this selection did not involve any correlation between humanity and valence of the emotions ($r = .04$). The 30 emotions appeared one at a time on the computer screen, together with a scale on which participants could click a value from 1 (*not at all*) to 7 (*very much*) to indicate how much they thought the Aborigines were likely to feel the emotion.

After completing this task, participants responded to four questions that measured the extent to which they felt guilty for what happened to the Aborigines as a consequence of British (i.e., the participants' in-group) arrival on the Australian continent. These questions were adapted from Doosje et al. (1998) and read "I feel guilty about the negative things we British have done to Aborigines," "I feel regret for my country's harmful past actions toward Aborigines," "I feel regret about things my country did to Aborigines in the past," and "I can easily feel guilty about the bad outcomes received by Aborigines that were brought about by British in the past." Participants were then asked two questions that tapped the extent to which they were ready to make personal contributions to pay reparations to Aborigines and the extent to which they thought the British in general should make reparations. Finally, they answered six questions measuring their level of identification with the British (e.g., "I identify with Britain," "The fact that I am British does not mean much to me"). All of these items were answered on a 7-point scale (1 = *not at all*, 7 = *very much*).

Results

A composite identification score was computed by averaging the six items of the identification scale after reversal of the scores for two items ($\alpha = .81$, $M = 3.95$, $SD = 1.40$). A t test was then computed on this score to assess whether participants' level of identification differed across conditions. This was not the case ($t < 1$, *ns*).

Infrahumanization

The same analytical strategy used in Experiment 1 was adopted here. A mixed model was used with condition (high impact vs. low impact) as a categorical, between-participants factor and identifi-

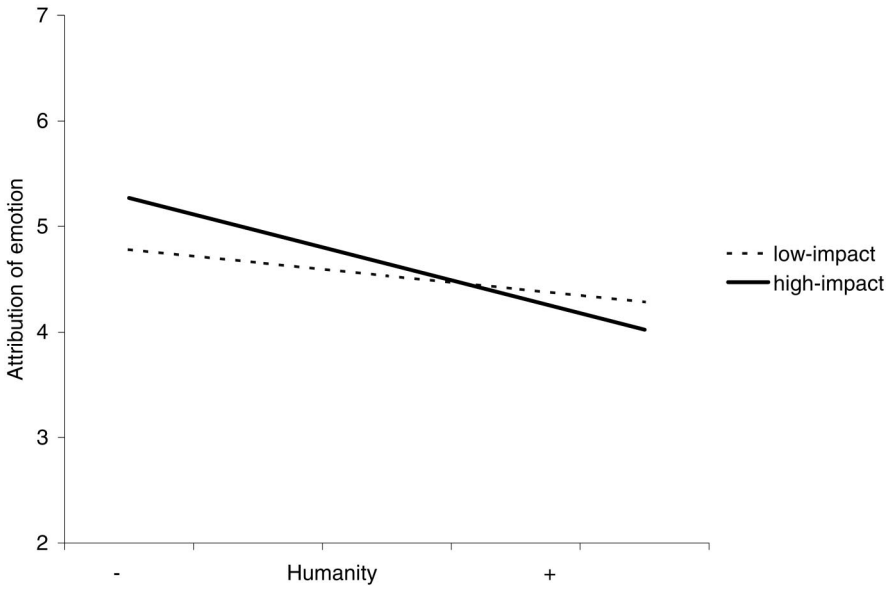

Figure 2. The effect of emotion humanity on attribution of emotions as a function of the experimental condition (Experiment 2). More negative values mean greater infrahumanization.

cation as a continuous between-participants factor. Humanity and valence were also included as continuous, within-participant variables. All continuous predictors were centered. The dependent variable was, as in Experiment 1, the attribution of emotions.

Of the main effects, only humanity was significant, $F(1, 1641) = 32.88$, $p < .01$, indicating that the higher the humanity of the emotion the less it was attributed to the target ($\beta = -.19$, $p < .01$). Of importance, the Humanity × Condition interaction was significant, $F(1, 1641) = 6.01$, $p < .01$, indicating that humanity predicted attribution differently in the two conditions. A look at the coefficients revealed that it did so more strongly in the high-impact ($\beta = -.17$, $p < .01$) than in the low-impact condition ($\beta = -.07$, $p < .01$; see Figure 2). Put differently, as their humanity increased, emotions were less likely to be attributed to the target, but the significance of the interaction, together with the relative magnitude of the coefficients, indicated that this trend was significantly stronger in the high-impact condition compared with the low-impact condition.

Humanity and valence interacted significantly, $F(1, 1641) = 27.87$, $p < .01$. The interaction was due to the fact that the effect of humanity on attribution decreased with the increase in valence toward more positive emotions (low valence, $\beta = -.21$, $p < .01$; mean valence, $\beta = -.10$, $p < .01$, and high valence, $\beta = -.00$, *ns*).[4]

The Valence × Condition interaction was also significant, $F(1, 1641) = 42.15$, $p < .01$. Although, in the low-impact condition, the more positive the emotion the more it was attributed to the target ($\beta = .09$, $p < .01$), the reverse was true in the high-impact condition ($\beta = -.17$, $p < .01$).

Among the three-way interactions, only Identification × Condition × Valence was significant, $F(1, 1641) = 6.91$, $p < .01$. Two 2-way Valence × Condition interactions were computed for high and low levels of identification. This proved significant in both cases (*ps* < .01), but the shape of the interaction was different. At low levels of identification, the more positive the emotion, the more it was attributed to the target in the low-impact condition ($\beta = .18$, $p < .01$), but the less it was attributed to the target in the high-impact condition ($\beta = -.16$, $p < .01$). At high levels of identification, the valence of the emotion did not predict attribution in the low-impact condition ($\beta = .02$, *ns*), whereas in the high-impact condition, the more positive the emotion the less it was attributed to the target ($\beta = -.11$, $p < .01$). Identification did not significantly moderate the critical Condition × Humanity effect, and the four-way interaction was not significant.

Guilt, Infrahumanization, and Reparations

A guilt composite score was computed by averaging participants' answers to the four items assessing their level of guilt for the past actions of their in-group into a composite score ($\alpha = .89$; $M = 5.35$, $SD = 1.25$). This score was entered as the dependent variable in a model with condition, identification, and their product as predictors. The effect of condition on guilt was significant, $F(1, 53) = 3.89$, $p < .05$, with participants in the high-impact condition feeling more guilty ($M = 5.65$, $SD = 1.02$) than those in the low-impact condition ($M = 5.05$, $SD = 1.41$). Identification was also a predictor, with stronger identification being associated with less guilty feelings ($\beta = -.26$, $p < .01$). The interaction effect did not reach significance.

Compensation was measured at two levels, personal and collective. These were analyzed separately with the same model used for guilty feelings. For personal compensation, only identification was

[4] Following Cohen and Cohen (1983), we used low levels of valence corresponding to one standard deviation below the mean and high levels of identity to one standard deviation above the mean. The same rule was followed for each occasion the effect of one factor or an interaction effect was tested for specific values of a third factor.

a reliable predictor, with stronger identification being associated with less willingness to provide personal compensation ($\beta = -.34$, $p < .01$). No other effects were significant.

For collective compensation, both the effect of condition, $F(1, 53) = 5.61$, $p < .02$, and identification, $F(1, 53) = 7.27$, $p < .01$, were significant. Participants in the high-impact condition were more willing to provide collective compensations ($M = 5.41$, $SD = 1.29$) than those in the low-impact condition ($M = 4.60$, $SD = 1.54$). Also, stronger identification was associated with less willingness to provide collective compensation ($\beta = -.33$, $p < .01$). No other effects were significant.

To test the role of guilt as a mediator between condition and compensation, we computed a series of regression analyses (Baron & Kenny, 1986). These revealed that guilt predicted collective compensation, $\beta = .61$, $t(55) = 5.73$, $p < .01$, and, more important, that the above-described effect of condition on collective compensation became nonsignificant when guilt was entered into the model, $\beta = .13$, $t(54) = 1.26$, *ns*. A Sobel's test indicated that the reduction in the beta of this effect (from .24 to .13) when guilt was added to the model was marginally significant ($Z = 1.83$, $p < .08$).

In addition to being interesting itself, the effect of the manipulation on guilt allowed us to test whether it had any mediating role on the effects of the manipulation on infrahumanization and reparations. We tested the hypothesis that guilt mediated the interaction effect between condition and humanity in predicting the attribution of emotions by adding guilt to this model as a covariate. No change in the pattern of results emerged, thus providing no support for guilt's mediational role in infrahumanization. Furthermore, we wanted to assess whether guilt was associated with the level of infrahumanization and so tested whether guilt moderated the relationship between humanity and attribution of emotion. Guilt replaced identification as a predictor in the original moderational model. This analysis yielded no significant Guilt × Humanity interaction, suggesting that collective guilt was not associated with our measure of infrahumanization.

Discussion

The primary goal of Experiment 2 was to provide further evidence that when reminded that their own in-group had committed atrocities against an out-group, individuals would display stronger infrahumanization of that out-group. The findings yielded clear support for this hypothesis. After reading that 200 years ago British colonization led to the quasiextermination of the Australian Aboriginal population, British participants perceived the Aborigines as less human than when they read that British colonization did not produce important negative effects on the Aboriginal population.

Experiment 2 thus replicated the critical finding from Experiment 1 in a real intergroup scenario, while answering two remaining questions. First, contrary to Experiment 1, in Experiment 2 the effect of the manipulation on infrahumanization was not moderated by the valence of emotions. Second, Experiment 2 produced the expected pattern of results while keeping the relationship between the British and the Aborigines constant and clearly negative (e.g., colonizer and colonized, respectively) but at the same time varying the outcome of their encounter dramatically from one condition to the other. It should be noted that the moderating effect of perceived in-group responsibility that emerged in Experiment 1 already suggested that it was not exclusively the quality of the relationship that was responsible for the pattern of findings on infrahumanization. However, the findings of Experiment 2 provide more direct reassurance in this regard.

A second aim of Experiment 2 was to test the possible moderating role of identification on the effect of our manipulation on infrahumanization. The pattern of results did not yield evidence for such an effect, as identification moderated the Valence × Condition interaction but not the Humanity × Condition interaction.

Experiment 2 also investigated the effects of the manipulation on participants' feelings of collective guilt as well as willingness to provide reparations to the out-group. Consistent with previous findings, making people aware of their in-group's past wrongdoings did increase their feelings of guilt, and this, in turn, increased their willingness to provide collective reparations to the out-group. The pattern emerging from our experiment, however, differs from that observed by Doosje et al. (1998) inasmuch as identification with the in-group did not moderate this effect. This result was perhaps to be expected though, as we did not manipulate the ambiguity of described harm, a factor that itself moderated the identification–guilt link in Doosje et al. (1998). The main effect of identification, such that highly identified people felt less guilt, may indicate a situation subjectively similar to the ambiguous condition in that experiment. Alternatively, it may result from stronger tendencies toward psychological defense among high identifiers in this population.

Although collective guilt increased in the high-impact condition, adding it as a covariate in the model testing for infrahumanization effects yielded no evidence for either mediation or suppression. Additionally, guilt was not related to the level of infrahumanization. In other words, the stronger infrahumanization in the high-impact condition did not seem either to be associated with greater self-reported collective guilt or to be restrained by such guilt. It thus seems that, at least in the time frame of a laboratory study, infrahumanization bore no relationship to the emergence of explicit guilty feelings—as indicated by the lack of relationship between the two variables.

The findings from Experiment 1 and Experiment 2 were in line with our basic hypotheses, but we deemed it necessary to further test the moderating and mediating hypotheses described above. More important, because Experiment 2 varied the number of deaths described, we wanted Experiment 3 to provide stronger evidence for the hypothesis tested on a post hoc basis in Experiment 1; namely, that it is not death per se but in-group responsibility for killing that leads to stronger infrahumanization.

Experiment 3

Experiment 3 looked at the attribution of emotions to Native Americans by White Americans of European descent. Relations between people of European descent and Native Americans became extremely hostile shortly after the arrival of the former on the North American continent. The various Native American tribes were either exterminated or confined in reservations.

The foremost aim of Experiment 3 was to replicate the findings of Experiment 1. It thus comprised a condition in which participants were reminded that the Native American population suffered heavy losses from a campaign of extermination and a condition in which participants learned that an equal loss of the Native American population occurred because of diseases introduced by White settlers rather than extermination. These two conditions are a conceptual replication of the intentional-killing and the accidental-death conditions of Experiment 1.

As in Experiment 2, in Experiment 3 we measured the level of identification with the in-group to assess its possible moderating role on infrahumanization effects as well as feelings of collective guilt and willingness to provide reparations. Finally, in Experiment 3, we added an exploratory item that assessed blatant infrahumanization of the out-group. Given previous variability in correlations between explicit and implicit measures of socially sensitive attitudes (see Greenwald et al., 2002; Rudman, 2004), it was not clear whether prevailing antibias norms would disrupt the effect of killing on the blatant measure or disrupt the correlation between the latter and our implicit measure of infrahumanization. If such a correlation could be found, the direct measure could partially validate the implicit measure's ability to capture individual variance in the tendency to infrahumanize out-groups. Because our operational definition of infrahumanization differs from previous research, this would provide further support that such a definition and its concurrent measure do indeed tap infrahumanization. Nonetheless, even if the two measures shared some variance with each other, it is possible that the explicit and implicit measures might be affected differently by our manipulation. A heightened awareness of in-group responsibility in the killing condition could also activate awareness of antiracist norms among participants, and this could partially negate the effects of the manipulation on explicit infrahumanization.

Method

Participants

One hundred twenty participants were recruited through a posting on the New York section of a general-purpose Internet Web site. They were offered $15 for participating in two different studies, only one of which is reported here.

Procedure and Materials

After giving consent, participants sat in front of a computer in a laboratory cubicle and received instructions on how to get started. The experimenter waited outside the cubicle, but she remained available if at any time the participant needed help.

After a few screens in which they were welcomed to the experiment, participants read about the topic under investigation and the alleged goal of the experiment. The experiment was presented to them as a cross-cultural study that aimed to investigate how individuals perceive people from other cultures in emotional terms. Participants were told that a brief history of the Native Americans would be provided, allegedly to supply every participant with a basic knowledge of the culture under investigation.

This history started with a brief description of the everyday life of Native Americans and then explained what happened after the arrival of the Europeans on the North American continent. This part varied depending on the condition. In one condition, which is referred to as the high-impact/killing condition, participants were told that White settlers were responsible for a dramatic decline in the number of Native Americans both because of planned military campaigns conducted by their armies against the Native Americans and because of diseases they and their cattle introduced. In the high-impact/disease condition, the same population decline as in the high-impact/killing condition was presented, but it was presented as a consequence solely of diseases rather than of intentional killings. Finally, in the low-impact condition, participants were told that although a decline in the number of Native Americans happened shortly after the arrival of the Europeans, the number subsequently stabilized to a level similar to that prior to their arrival.

Participants were then informed that the next task consisted of a study in the psychology of emotions across cultures. These instructions read:

> This study aims to show that people are pretty good in detecting what kind of emotions appear on people's faces, and therefore can tell, for various ethnic groups, which kind of emotions characterize them best. Even if you have never met Native Americans before, this is not important, since the study looks at expectations, rather than actual knowledge. We will present you with a series of emotions, and would like to ask you to what extent you think each of these emotions can be felt by Native Americans.

Participants were then presented with a list of emotions one at a time on the computer screen, together with a scale on which participants could click a value from 1 (*not at all*) to 7 (*very much*) to indicate how much they thought the Native Americans were likely to feel the emotion. The same emotions used in Experiment 2 were used in this experiment.

After completing this task, participants were asked to answer the same questions assessing feelings of collective guilt and willingness to provide reparations that were used in Experiment 2. Because of the lack of moderating effects of identification observed in Experiment 2 and the nature of the in-group–out-group distinction, identification with the in-group was measured with a single item: "I feel I have a connection with other White Americans." A direct infrahumanization item was also included, which asked participants to what extent they agreed with the statement "Native Americans were basically wild creatures before the arrival of the White men." As with the other items, participants answered on a 7-point scale (1 = *not at all*, 7 = *very much*).

Participants in the high-impact/disease condition were further asked to indicate what caused the decline in the population of Native Americans. They could answer this question by typing their opinion into a field. Finally, participants were asked to indicate their ethnic group and country of citizenship as well as to answer a series of other questions that we included for exploratory purposes that are not discussed here.

Results

From the total sample, 21 participants were eliminated either because they were not U.S. citizens or because they indicated an ethnicity other than White, Caucasian, or Western European. Of the remaining 99 participants, 7 in the high-impact/disease condition indicated that war and/or massacres conducted by White settlers were responsible for the decrease in the Native American population, contrary to the explanation provided at the beginning of the experiment. These participants were eliminated from subsequent analyses, leaving a sample of 92.

Infrahumanization

The same analytical model strategy used in Experiment 2 was adopted. The attribution of emotions was entered as the dependent variable in a mixed model with condition (high-impact/killing vs. high-impact/disease vs. low impact), humanity, valence, identifi-

cation, and their products, as predictors. Humanity, valence, and identification were centered beforehand. Among the main effects, condition was marginally significant, $F(2, 86) = 2.41$, $p < .09$. This effect was due to a lesser attribution of emotions in the high-impact/disease condition ($M = 4.90$, $SE = 0.23$) compared with the low-impact condition ($M = 5.52$, $SE = 0.18$, $p < .03$) and the high-impact/killing condition ($M = 5.44$, $SE = 0.19$, $p < .08$). The effect of valence was significant, $F(1, 2650) = 10.03$, $p < .01$, showing that emotions were less likely to be attributed the more positive they were ($\beta = -.05$). The effect of humanity was also significant, $F(1, 2650) = 12.73$, $p < .01$, showing that emotions were less likely to be attributed the higher they were on humanity ($\beta = -.06$).

Of greater interest for our purposes, the Humanity × Condition interaction was significant, $F(2, 2650) = 3.65$, $p < .05$. Lesser attribution of emotion occurred as the humanity of the emotion increased, but such a trend was stronger in the high-impact/killing condition ($\beta = -.13$, $p < .01$) than in the low-impact condition ($\beta = -.04$, $p < .12$) or the high-impact/disease condition ($\beta = -.01$; *ns*). Consistent with our hypothesis, the high-impact/killing condition differed from the low-impact condition ($p < .05$) and from the high-impact/disease condition ($p < .05$), whereas the high-impact/disease and low-impact condition did not differ from each other (see Figure 3).

The Humanity × Valence interaction was also significant, $F(1, 2650) = 8.08$, $p < .01$. As in the previous study, the interaction was due to the fact that the effect of humanity on attribution decreased with the increase in valence toward more positive emotions (βs $= -.11$ and $-.06$, for lower and moderate levels of valence, respectively, *ps* $< .05$; $\beta = -.01$, *ns*, for high levels of valence). Similarly, the Valence × Condition interaction reached significance, $F(2, 2650) = 10.31$, $p < .01$. Although in the high-impact/killing condition and in the high-impact/disease condition the more positive the emotion the less it was attributed to the target ($\beta = -.13$ and $-.10$, respectively, $p < .05$), in the low-impact condition a nonsignificant opposite trend was observed ($\beta = .04$, $p < .13$). The low-impact condition differed from the high-impact/killing condition and from the high-impact/disease condition (*ps* $< .05$), whereas the high-impact/disease and high-impact/killing conditions did not differ from each other. Finally, the Condition × Identification interaction was significant, $F(2, 86) = 3.77$, $p < .03$. Identification did not significantly predict attribution of emotions in the low-impact or high-impact/disease conditions, but it did in the high-impact/killing condition, in which stronger identification was associated with greater attribution of emotion ($\beta = .24$, $p < .03$).

As in Experiment 2, among the three way interactions, only the Identification × Condition × Valence interaction was (marginally) significant, $F(1, 2650) = 2.36$, $p < .09$. Two 2-way Valence × Condition interactions were computed for high and low levels of identification. This proved significant at low levels of identification, $F(2, 2650) = 1142$, $p < .01$, but not at high levels of identification. At low levels of identification, the more positive the emotion was, the more it was attributed to the target in the low-impact condition ($\beta = .04$, $p < .03$), but the less it was attributed to the target in the high-impact/killing ($\beta = -.11$, $p < .01$) and high-impact/disease conditions ($\beta = -.07$, $p < .01$). The four-way interaction was not significant.

Blatant Infrahumanization

The effects of identification and condition on the explicit measure of infrahumanization were tested in a model with condition, identification, and their product as predictors and participants' answers to the explicit infrahumanization item as dependent variable. Although the means were in the expected direction (*M*s = 1.34, 1.36, and 1.54 for the high-impact/disease, low-impact, and high-impact/killing conditions, respectively), the effect of condition did not reach significance. No other effect was significant.

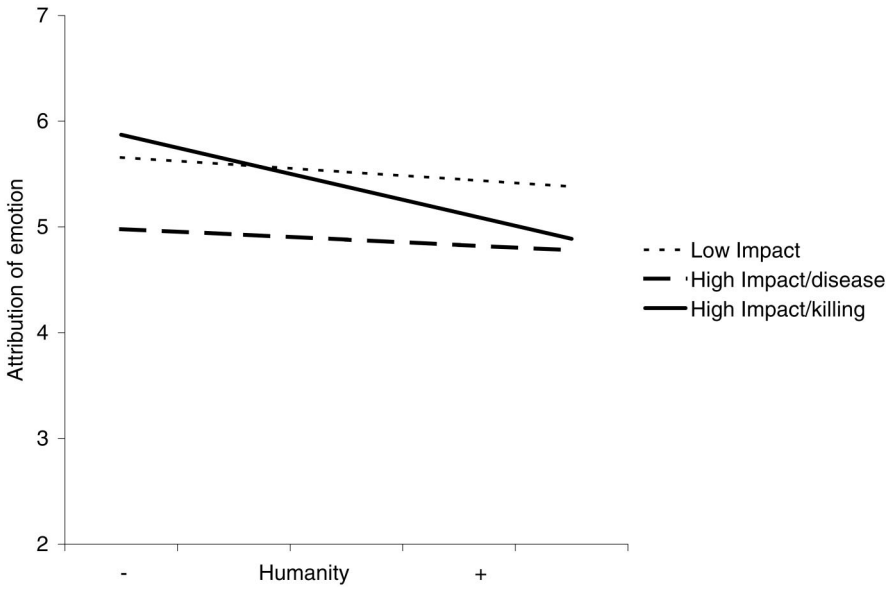

Figure 3. The effect of emotion humanity on attribution of emotions as a function of the experimental condition (Experiment 3). More negative values mean greater infrahumanization.

To test whether our two measures of infrahumanization were related to each other, we computed a mixed model with attribution of emotions as dependent variable and humanity, the explicit infrahumanization item, and their product as predictors. The effect of the product term was significant, $F(1, 2666) = 8.61$, $p < .01$, revealing that the level of emotional infrahumanization increased in a linear fashion with increases in the extent to which participants infrahumanized the target in a blatant way (βs = $-.02$, $-.05$, $-.07$, $-.10$, and $-.11$ for increasing, equally spaced levels of blatant infrahumanization, respectively).

Guilt, Infrahumanization, and Reparations

The four items tapping guilty feelings were averaged to form a composite score ($\alpha = .85$, $M = 5.07$, $SD = 1.54$). This score was entered as a dependent variable in a model with condition and identification (centered) and their products as predictors. This revealed a main effect of condition, $F(2, 86) = 5.83$, $p < .01$. As expected, this was due to the fact that participants in the high-impact/killing condition reported feeling more guilt ($M = 5.78$, $SD = 1.08$) than did participants in the high-impact/disease ($M = 4.71$, $SD = 1.74$) or low-impact condition ($M = 4.65$, $SD = 1.58$). Although the main effect of identification was not significant, the interaction was marginally so, $F(2, 86) = 2.74$, $p < .07$. Estimated means revealed that high and low identifiers differed significantly only in the low-impact condition, with high identifiers reporting less guilt ($M = 4.19$, $SE = 0.34$) than low identifiers ($M = 5.15$, $SE = 0.35$; $p < .05$). In the two other conditions, high and low identifiers did not report different levels of guilt (Ms = 5.04 vs. 4.25, SEs = 0.38 vs. 0.45, and 5.49 vs. 5.99, SEs = .038 vs. 0.33, for the high-impact/disease and high-impact/killing conditions, respectively).

The same analyses were performed for the two compensation items, but no significant effects emerged for either measure. To increase comparability with Experiment 2, we replicated these analyses while excluding the high-impact/disease condition. These analyses revealed a marginally significant effect of identification similar to that observed in Experiment 2, with higher levels of identification leading to less willingness to provide collective compensation ($\beta = -.35$, $p < .09$). Means for the high-impact/killing ($M = 4.60$, $SD = 1.61$) and the low-impact condition ($M = 4.02$, $SD = 1.62$) were in the expected direction, but they were not significantly different ($p < .25$)

As in Experiment 2, we tested the hypothesis that guilt mediates the interaction effect between condition and humanity in predicting the attribution of emotions by adding guilt as a covariate to the model testing the effect of condition on the degree of infrahumanization. This did not lead to any change in the pattern of results. Specifically, the significance of the critical Condition × Humanity interaction remained the same. We also assessed whether guilt was associated with infrahumanization by testing whether it moderated the relationship between humanity and the attribution of emotion. As in Experiment 2, this interaction was nonsignificant, suggesting that collective guilt was not associated with our measure of infrahumanization.

Discussion

The pattern of results emerging from this experiment supported our prediction that the infrahumanization of Native Americans would be stronger in the high-impact/killing than in the low-impact and high-impact/disease conditions. In other words, after White participants read of the near extermination of the Native American population by their own group (e.g., White settlers), the negative effect of humanity on the attribution of emotions was stronger than when they were not presented with a reminder of such extermination or when an equal number of deaths was presented merely as the consequence of diseases. These findings replicate and complement those obtained in the two previous studies. Indeed, as in Experiment 1, they show that in-group responsibility for the high-impact/killing group is necessary for the emergence of the effect.

As in Experiment 2, in this last experiment the effect was obtained in a context in which the relations between the in-group and the out-group (colonizer and colonized, respectively) are maintained constant. Also, in Experiment 3, as in Experiment 2, the critical infrahumanization effect was not moderated by the valence of the emotion. Furthermore, the valence of the emotions interacted with the manipulation to predict attribution of emotions in a manner that was clearly different from the interaction between humanity and the manipulation. In valence effects on emotion attribution, the high-impact/killing and high-impact/disease conditions showed a very similar pattern, which in turn differed from the low-impact condition; however, in humanity effects on emotion attribution, it was the high-impact/killing condition that was clearly distinguished from the two other conditions, which did not differ from each other. Such a result further serves to distinguish the infrahumanization effect from valence bias in attribution. One additional effect emerged, a main effect of condition on overall emotional attribution: In this study, participants attributed marginally less emotion in the high-impact/disease condition than they did in the two other conditions. Given that the result was not theoretically predicted and was only marginally significant, we do not engage in further speculations about its meaning.

As in Experiment 2, the manipulation affected feelings of collective guilt. Consistent with the results of Experiment 2 and with research on collective guilt (Branscombe & Doosje, 2004), the high-impact/killing condition led to stronger collective guilt than the low-impact condition or the high-impact/disease condition. This, however, did not seem to translate into a willingness to provide reparations for the wrongdoing of one's group. The lack of effect on reparations may be due to the possibility that our European American participants related this scenario to that of reparations to African Americans for slavery, which is a highly contested issue in the United States. Furthermore, identification moderated the effect of condition on collective guilt. Although the highest levels of collective guilt were experienced in the high-impact/killing condition among both high and low identifiers, in the low-impact condition, high identifiers reported less guilt than low identifiers, a result that is consistent with previous findings.

As in Experiment 2, in Experiment 3 the level of identification with the in-group did not emerge as a significant moderator of the effect of the manipulation on infrahumanization, nor were feelings of collective guilt related to such an effect.

General Discussion

We proposed and tested the hypothesis that reminding individuals of the killing of out-group members by their own in-group would lead to enhanced infrahumanization of the out-group. Across three studies in two different countries (Britain and United States) that used different out-groups (aliens, Aborigines, and Native Americans), we found support for this hypothesis. These findings are, to our knowledge, the first experimental evidence that infrahumanization of a target can be a consequence of in-group violence against that target as well as a cause.

The pattern that emerged from our studies (Experiment 1 and 3) also suggests that infrahumanization is not intensified merely by perceiving the suffering of another group; instead, the attribution of responsibility for the suffering to one's own group is necessary. This finding is inconsistent with an interpretation in terms of victim derogation. It also gives a degree of protection against an alternative explanation that the phenomenon at hand is cognitive but not motivational and that participants see the killings as being merely compatible with having a less-human status and adjust their assessments of humanity accordingly. If it were just a matter of compatibility, in-group responsibility should not have the effect demonstrated in these studies.

These results also inform recent findings that infrahumanization of the out-group occurs principally for socially relevant groups with some meaningful connection to the in-group (Cortes, 2005). The perception of responsibility as well as conflict may, in fact, also increase the perceived relevance of the out-group, which could be examined as a mediator of the effect. Conversely, increasing the relevance of out-groups might, in turn, have increased infrahumanization through some anticipation of the processes outlined here—the possibility, if not the actual fact, of conflict of some kind.

The rationale behind our hypothesis extends accounts of the causal link from dehumanization to violence and into the postviolence period; in particular, supporting the idea that denying full human status to the victims allows people to disengage self-sanctions (Bandura, 1990b). This line of research would benefit from further investigation of how manipulations such as those used in our experiments threaten participants' psychological equanimity and how this threat relates to infrahumanization processes.

One attempt in this direction was made in Experiment 2 and 3, by measuring participants' guilt for the wrongdoings of their group. Participants reported greater guilt in the experimental condition, but although this mediated their willingness to provide reparations, it was not related to infrahumanization. A possible explanation for this lack of relationship may be the nature of our measure. Previous research by Roccas et al. (2004) has shown that minimizing in-group responsibility for the wrongdoings toward an out-group may help reduce collective guilt. However, both variables in the Roccas et al.'s study are in-group focused, whereas our measure of infrahumanization focused on the out-group. Also, minimization and guilt were both assessed using self-report measures, whereas the emotional infrahumanization that emerges in our experiments is considered a largely unconscious process (Demoulin, Rodriguez, et al., 2004). Finally, the lack of relationship observed may actually represent infrahumanization's moderate level of effectiveness in suppressing or avoiding manifest guilt; those who would feel guilty infrahumanize, and thus they end up as guilt free as those who did not infrahumanize.

Another possible account for the lack of relationship between guilt and infrahumanization points to the possibility that two different psychological processes occur when one learns about the violence perpetrated by one's in-group. A conscious response may be triggered that is represented by the feeling of guilt and that, in turn, leads to positive actions toward the out-group (e.g., reparations). At the same time, an unconscious response consisting of the infrahumanization of the victim may occur, one that functions implicitly to reduce distress over one's own responsibility. If this hypothesis is correct, it is possible that the latter, unconscious route to reestablishing psychological equanimity (namely, infrahumanization of the out-group) is related to feelings of shame, as opposed to feelings of guilt.

Research has shown that although at the individual level guilt is related to empathy and concerns for the victim of one's wrongdoing, shame is unrelated to such feelings but rather correlates with a host of negative psychological states, such as anger, irritability, resentment, and aggression (Tangney & Dearing, 2002). The same research, however, has also conceptualized shame and guilt as personality factors of proneness to shame or guilt; this proneness may emerge as a moderator of the reaction of individuals to reminders such as those used in the present research. The behavioral consequences of shame and guilt proneness are particularly interesting, given that shame promotes withdrawal actions, whereas guilt promotes reparative ones.

Future research to address this possibility would benefit from using implicit, physiological indicators of emotional response. It is possible that physiological changes will occur as a consequence of learning of atrocities committed by one's in-group toward an out-group and that this will in turn lead to greater infrahumanization. Infrahumanization, however, may well be a fairly automatic process that works precisely to prevent anxiety from emerging, in a way similar to that proposed by terror management theorists to account for mortality salience effects (cf. Greenberg, Solomon, & Pyszczynski, 1997). In this case, research may fail to detect changes in physiological arousal in association with infrahumanization processes, or it may even find an inverse relationship.

Measuring Infrahumanization

Our measure of infrahumanization was an adapted version of that proposed by Leyens et al. (2000) and, as such, was very subtle. In Experiment 3, we included a more blatant measure of infrahumanization, but despite the fact that the trend was as expected, the effect of the manipulation was not significant. Possibly, this was because being told of a massacre awakened social norm concerns that counteracted the greater tendency to infrahumanize that was shown on implicit measures. Of course, subtle versus blatant is a matter of degree rather than kind, so it is possible that less blatant items than the one used in Experiment 3 may allow observation of infrahumanization effects in future research. This blatant measure did, however, share enough variance with the main measure to show a significant correlation, thus providing the first direct evidence of construct validity for the infrahumanization measure developed by Leyens et al., or at least for the variant that we have used in the present studies.

Our main infrahumanization measure was based on attribution of potential emotions to the target. Such a measure, however, could be influenced by considerations of the emotions actually experienced in a situation. In other words, individuals are more likely to

feel certain kinds of emotions when they have suffered compared with when they have not suffered, pain being an example. Differential attribution of emotions on the basis of conflict may thus have little to do with infrahumanization. With this in mind, we note that the emotion-attribution question was formulated to minimize the possibility that participants would interpret it incorrectly, and its context was varied slightly across the three studies to avoid the impact of the specific characteristics of the question. As well, our use of a large number of emotions dramatically reduces the chance that the resonance of one particular emotion could be responsible for the observed pattern of findings. Furthermore, if the resonance of particular emotions were playing a major role in our experiments, valence would critically moderate any observed Humanity × Condition effects—but this occurred only in Experiment 1, and even in this case, the interaction held for both neutral and negative emotions. On the contrary, all three studies showed a two-way interaction between valence and condition, such that the capacity for negative emotions was increasingly attributed to the victimized group when mass deaths (including, in Experiment 3, mass deaths from disease) were described. Finally, among participants confronted with the same description of an accidental catastrophe, only those who perceived in-group responsibility later showed stronger infrahumanization (Experiment 1), an effect that is hard to explain in terms of the actual emotions felt by the out-group.

Identification and Infrahumanization

Although we found no moderating effect of identification on infrahumanization, existing infrahumanization experiments have often shown that in-group identification moderates the attribution of emotions to the in-group more than to the out-group (Demoulin et al., 2002; Paladino et al., 2004; but see Rohmann, Niedenthal, Brauer, Castano, & Leyens, 2005). Therefore, because our infrahumanization measures focused on out-groups, their results are consistent with the previous literature and with literature emphasizing the separateness of in-group and out-group attitudes (Brewer, 1999).

Out-Group Threat and Infrahumanization

In all the cases used in these studies, the action taken against the out-group was described as fairly one-sided. The battle on the moon in Experiment 1 and the massacres of Aborigines (Experiment 2) and Native Americans (Experiment 3) were presented as one-sided massacres that occurred without provocation. In this context, the infrahumanization of the enemy group is even more impressive, given that the out-group was unlikely to pose a realistic threat to the in-group. In discussing the dehumanization process among the Allies in World War II, Fussell (1989) argued that the more threatening an enemy nation was, the more Allied propaganda denied it humanity. Although the Japanese were considered the most ferocious opponents and accorded the most animal-like traits, the Italians, in Fussell's analysis, were stereotyped as less fierce fighters and treated in more human terms. It would thus be interesting to vary the perceived pugnacity of an out-group in conflict. Perhaps, as Fussell's analysis would suggest, the fact of having given provocation or resistance before being killed would result in greater infrahumanization. On the other hand, the prevalence of animal metaphors such as "slaughtered like sheep" to describe massacres of unresisting people suggests that one subjective marker of human intelligence is the ability to foresee lethal danger and fight or flee accordingly. Therefore, unresisting or powerless victims might be infrahumanized even more severely than those who successfully resist or evade aggression, being more subject in their passivity to the process of "routinization" that Kelman (1973) identified as an additional disinhibition to sanctioned massacre.

Social and Political Implications

Often, social psychological research yields evidence for fairly unpleasant phenomena. Infrahumanization is certainly one of them. And the specific effects presented here are all the more disturbing because they suggest that people are ready to deny humanity in others to maintain their own psychological equanimity. At the same time, however, these results have the potential to help shape policy and intervention. Indeed, awareness of this "ironic" phenomenon may lead to the reduction of its negative effects. Consideration of the victim–blame phenomenon, for example, may help to limit, if not eliminate, its effect in jury deliberation. Similarly, knowing that perpetrators may engage in infrahumanization of their victims after committing violence toward them may inspire an examination of ways to avoid or limit such effects.

The need to focus on strategies to defuse the potential for violent conflict seems particularly relevant in this era in which the United Nations is increasingly willing to intervene in local, notably interethnic violent conflicts. As several recent cases have shown, although military victory is often easily achieved by United Nations-backed coalitions, peace-building operations tend to meet with enormous difficulties in dealing with postviolence situations. These difficulties are certainly caused by a multiplicity of factors that go well beyond psychological ones, but it seems clear that preventing or reducing infrahumanization processes and ensuring that the "other" is somehow included in the same moral community as the in-group would be an important step.

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