The role of in-group identification in infra-humanization

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*P*eople tend to infra-humanize by attributing more human essence to their in-group than to out-groups. In the present article, we focus on the attribution of primary and secondary emotions to operationalize the human essence. We propose that, in order to infra-humanize, people need to be categorized in meaningful groups. In addition, we argue that what differentiates meaningful from nonmeaningful groups is that the people essentialize, perceiving members of the group as sharing an underlying, common essence. Also, we hypothesize that participants will identify more with their in-group in the case of meaningful groups. Three types of groups were created to manipulate the meaningfulness of the categorization. Participants were either randomly assigned to a group or they chose their group as a function of their preferences for a colour or the type of career they wished to pursue. As expected, infra-humanization occurred only where the categorization's criterion was meaningful. In addition, in-group identification, but not essentialism, mediated the impact of the categorization criteria on the tendency to infra-humanize. Data also showed that infra-humanization is different from classic in-group favouritism. This is because in-group favouritism, but not infra-humanization, was observed in the situation where group membership was based on random assignment. In other words, for infra-humanization to occur mere categorization is not enough; meaningfulness is also needed. For in-group favouritism to arise, the knowledge of being part of a group is a sufficient prerequisite. The discussion focuses on conditions for reducing infra-humanization and on the relationship between in-group favouritism and out-group derogation.

*L*es gens ont tendance à infra-humaniser en attribuant plus d'essence humaine à leur endogroupe qu'aux exogroupes. Dans le présent article, nous nous centrons sur l'attribution des émotions primaires et secondaires pour opérationaliser l'essence humaine. Nous proposons que, pour infra-humaniser, les gens ont besoin d'être catégorisés dans des groupes qui sont significatifs. De plus, nous argumentons que ce qui différencie les groupes qui sont significatifs de ceux qui ne le sont pas est que les gens essentialisent, perçoivent les membres du groupe comme partageant une essence sous-jacente, commune. De plus, nous posons l'hypothèse que les participants s'identifieront plus avec leur endogroupe dans le cas des groupes qui sont significatifs. Trois genres de groupes ont été créés pour manipuler la signification de la catégorisation. Les participants ont été assignés de manière aléatoire à un groupe ou bien ils ont choisi leur groupe en fonction de leurs préférences d'une couleur ou du type de carrière qu'ils espèreraient entreprendre. Tel que prédit, l'infra-humanisation a eu lieu uniquement dans les situations où le critère de la catégorisation était significatif. De plus, l'identification endogroupale, mais pas l'essentialisme, a médié l'impact des critères de la catégorisation sur la tendance à infra-humaniser. Les données ont aussi indiqué que l'infra-humanisation est différente du favoritisme endogroupal classique. Tel est le cas parce que le favoritisme endogroupal, mais pas l'infra-humanisation, a été observé dans la situation où l'appartenance à un groupe était fondée sur l'assignation aléatoire. En d'autres termes, pour que l'infra-humanisation ait lieu, la simple catégorisation n'est pas assez. La signification est aussi requise. Par contre, pour que le favoritisme endogroupal émerge, la connaissance de faire partie d'une groupe est un pré-requis suffisant. La discussion se centre sur les conditions pour réduire l'infra-humanisation et sur la relation entre le favoritisme endogroupal et la dérogation exogroupale.

L as personas tienden a infrahumanizar en la medida que le atribuyen una mayor esencia humana al grupo de pertenencia (intragrupo) que a grupos externos (exogrupo). En el presente artículo nos focalizamos en la atribución de emociones primarias y secundarias respecto de la operacionalización de la esencia humana. Nosotros proponemos que con el objeto de infrahumanizar, las personas necesitan ser categorizadas en grupos significativos. Adicionalmente argumentamos que lo que diferencia grupos significativos de grupos no-significativos es que las personas esencializan, lo que significa que ellos perciben que los miembros de su grupo comparten una esencia común básica. Además hipotetizamos que los participantes se identificarán más con su intragrupo en caso de grupos significativos. Con la finalidad de manipular las variables de estudio se generaron tres grupos de intervención. En algunos casos la asignación de los participantes a los grupos fue aleatoria, en otros casos los mismos participantes eligieron el grupo de pertenencia en función a sus preferencias por un color o por el tipo de carrera que a ellos les gustaría seguir. Como era esperado, la infrahumanización ocurrió sólo en aquellas situaciones en las cuales el criterio de categorización fue significativo. Adicionalmente la identificación con el intragrupo, más no el esencialismo, mediaron el impacto del criterio de categorización sobre la tendencia a infrahumanizar. Los datos también mostraron que la infrahumanización es diferente al clásico favoritismo hacia el intragrupo. Esto se pudo deducir, debido a que el favoritismo hacia el intragrupo, más no la infrahumanización, fue lo que se observó entre los miembros del grupo que fueron asignados aleatoriamente. En otras palabras, mientras que en la genésis de la infrahumanización no basta únicamente con la categorización sino que el significado es necesario; para que haya favoritismo hacia el intragrupo es un prerrequisito suficiente el saberse parte del grupo. La discusión se focaliza en aquellas condiciones que podrían favorecer una reducción de la infrahumanización y en las relaciones entre favoritismo hacia el intragrupo y prejuicio hacia el exogrupo.

Keywords: Essentialism; Identification; Infra-humanization.

In his book *Folkways*, Sumner (1906) not only introduced the concept of ethnocentrism but reported many anthropological observations of dehumanization. As corroborated by Lévi-Strauss (1952/1987), many primitive tribes categorize themselves as human beings while using derogative (animal) names to designate other tribes. History and wars have shown and still show that dehumanization is not restricted to isolated tribes.

In the last decade, the study of dehumanization has received increased attention in social psychology. For instance, Haslam and colleagues recently proposed a model of dehumanization that rests on two distinguishable notions of humanness (Haslam, 2006; Haslam, Bain, Douge, Lee, & Bastian, 2005). Animalistic dehumanization refers to the perception that others lack what distinguishes humans from other animal species. Mechanistic dehumanization, in turn, refers to the denial of deep-seated characteristics such as warmth, emotionality, and cognitive openness. In mechanistic dehumanization, others are compared to automata rather than animals. Haslam (2006) argues that animalistic dehumanization is close to what Leyens and colleagues (2000) have called infra-humanization. This distinction between infra-humanization and dehumanization is reminiscent of the distinction between depersonalization and dehumanization introduced by Tajfel in 1981 (see also Billig, 2002). According to Tajfel, depersonalization is as a milder form of out-group treatment than dehumanization.

In the present article, we investigate whether common infra-humanization biases (for reviews, see Demoulin et al., 2004b; Leyens et al., 2003) can be found in minimal intergroup situations or whether some type of investment is necessary for the phenomenon to take place. We hypothesize that infra-humanization biases will be absent in minimal group situations where the categorization criteria are meaningless. In addition, we suggest that both identification with the in-group and in-group essentialization (i.e., the perception that the group represents a "real entity," see Castano, Yzerbyt, Paladino, & Sacchi, 2002) should mediate the link between meaningfulness of the categorization's criterion and the occurrence of infra-humanization.

Infra-humanization of out-groups

According to Rothbart and Taylor (1992), social categories are thought by many people to possess an essence that makes them what they are. In line with these authors, Leyens and colleagues (2000) proposed that one way to differentiate groups in terms of essence is to attribute the human essence to in-group members while reserving a less human essence for out-groups. In other words, people infra-humanize out-groups.

Leyens et al. (2000) proposed to operationalize the human essence by focusing on lay-people's views concerning uniquely human characteristics. Three such characteristics emerged from several surveys: intelligence, language, and uniquely human emotions. A group is said to be infra-human if it partially lacks at least one of these three characteristics. Most research on infra-humanization has concentrated on the differential attribution of uniquely human emotions to in-groups and out-groups because these attributions are independent of sociostructural factors. As a consequence, both dominated and dominant groups can claim to have more uniquely human emotions than their respective out-groups. In the remainder of the present paper, uniquely human emotions will be referred to as secondary emotions and nonuniquely human emotions as primary emotions (see Demoulin et al., 2004a).

The hypothesis that people tend to reserve the human essence for in-groups leads to the prediction that they will attribute more secondary emotions to their in-group than to out-groups. In contrast, because primary emotions are perceived as nonuniquely human emotions, which may even be exhibited by animals, these should be equally attributed to both in- and out-groups.

A series of studies have demonstrated this differential attribution of secondary emotions (for reviews, see Demoulin et al., 2004b; Leyens et al., 2003). Using the IAT paradigm, Paladino et al. (2002) showed that French-speaking Belgians and Canarians more quickly associated in-group (vs out-group) names with secondary emotions (a compatible task) than the reverse (an incompatible task). Another set of investigations showed that both low and high status groups attributed more secondary emotions to the in-group than to an out-group. No such differences appeared for primary emotions (Leyens et al., 2001). Other studies suggest that people are often reluctant to attribute secondary emotions to out-group members (Gaunt, Leyens, & Demoulin, 2002; Gaunt, Sindic, & Leyens, 2005; Leyens et al., 2001; Vaes, Paladino, Castelli, Leyens, & Giovanazzi, 2003). All in all, a large body of experimental data points to the ease with which infra-humanization bias occurs whereas investigations about the underlying processes leading to such bias are still lacking.

Meaning of a categorization's criterion

Recently, Cortes and colleagues (Cortes, Demoulin, Rodriguez, Rodriguez, & Leyens, 2005) suggested that infra-humanization biases mainly occur when the intergroup situation is perceived as being relevant (i.e., the intergroup differentiation is meaningful to the participants). Accordingly, categorization in an artificial and nonmeaningful situation should not lead participants to infra-humanize out-group members. In contrast, as the categorization's criterion becomes meaningful, infra-humanization biases should be observed and people should start making differences in the attribution of secondary (but not primary) emotions to in-group and out-group members.

Meaningfulness could also impact essentialist perceptions. Indeed, essentialism refers to the belief that categorization is meaningful rather than arbitrary and that it reflects underlying properties shared by all group members. If people face a situation where categorization is allegedly arbitrary, such as in a minimal group paradigm, there should be no essentialization. Finally, the more meaningful a category, the more likely that an individual will identify with it.

Past research has shown that infra-humanization is stronger among those individuals who strongly identify with their in-group (Paladino, Vaes, Castano, Demoulin, & Leyens, 2004). In addition, the theory suggests that infra-humanization should be stronger among those individuals who strongly differentiate groups in terms of essence. Consequently, we hypothesize that individuals in a meaningful category will display more infra-humanization than individuals in nonmeaningful categories, and that both in-group identification and the perception that the in-group is a real entity will mediate this effect.

Overview of the study

In the experiment, three conditions were created. We contrasted a minimal group situation, where assignment to the groups was allegedly random, with two quasi-minimal intergroup settings, where assignment to the groups was dependent on participants' preference for a colour or for a particular type of job. Thus, the meaningfulness of the categorization criteria would be higher in the quasi-minimal conditions than in the minimal random condition.

We hypothesized that infra-humanization should be absent in the random condition and present in the two meaningful conditions (Hypothesis 1). Second, in-group essentialization and in-group identification should be higher in the two meaningful conditions as compared to the random one (Hypothesis 2). Third, both in-group

essentialization and in-group identification should mediate the link between categorization meaningfulness and infra-humanization (Hypothesis 3). In addition, the use of minimal group situations allows the comparison between classic in-group favouritism and infra-humanization biases. It is predicted that mere (meaningless) categorization will be sufficient to produce in-group favouritism (Hypothesis 4) but not infra-humanization biases. Finally, because in-group favouritism and infra-humanization are dependent on different factors (Leyens et al., 2001), the two measures should be uncorrelated (Hypothesis 5).

METHOD

Participants

Forty-seven psychology students (6 males, 41 females) of the Catholic University of Louvain at Louvain-la-Neuve took part in the study for course credits.

Material

Infra-humanization. A list of six emotional terms was compiled. In order to avoid any valance priming from the Tajfel matrices, only positive emotions were used. Three positive primary emotions (*entrain*, liveliness; *joie*, joy; *jouissance*, lust) and three positive secondary emotions (*amour*, love; *attachement*, attachment; *bonheur*, felicity) were chosen from a pre-test (Demoulin et al., 2004a). Secondary emotions were rated in the pre-test as more uniquely human than primary emotions, $F(1, 4) = 55.44$, $p < .01$. Valence of primary and secondary emotions, however, did not differ, $F(1, 4) = 1.27$, *ns*. Fillers linked to competence and sociability were added to produce a list of 26 words presented in a random order. Participants were asked to choose, for each group, between 7 and 10 characteristics that best applied to the group (Leyens et al., 2001). They answered on separate pages for the in-group and the out-group. The order of presentation was reversed for half of the participants. Four scores were then obtained as a function of the number of each type of emotion participants selected for the in-group and the out-group. These scores could vary between 0 and 3.

In-group bias. In-group bias was measured by six Tajfel matrices. The matrices contained a set of 12 pre-selected allocations that varied in terms of

degree of in-group or out-group favouritism (i.e., selecting more points for one group implied fewer points for the other group). Equal distributions of points were deleted from the matrices to facilitate biased distributions. Matrices were chosen in order to provide the opportunity for maximum in-group or out-group profit and maximum differentiation. Participants were informed that they would have to play a game with the members of the other group. To do so, they had first to distribute points between the groups; the points acted as capital to start the game. In each matrix participants had to chose a cell that represented their choice of distributing the points to an in-group and an out-group member. Matrices were chosen in order to provide the opportunity for maximum in-group or out-group profit and maximum differentiation.

Identification. The identification scale was composed of eight items to be answered on 7-point rating scales (1 = *not at all*; 7 = *very much*). For each question (e.g., "My group members share the same view of things"), a blank space was provided next to the word "group" so that the participants could write down the name of the group they were allocated to. We computed an identification score by averaging the eight items comprising the identification scale ($\alpha = .83$)

Essentialism. The essentialism measure, adapted from Haslam, Rothschild, and Ernst (2000), was composed of nine items (e.g., "To what extent are members of the group similar to each other?") to be answered on 7-point rating scales (1 = *not at all*; 7 = *very much*). As the original questionnaire had revealed essentialism to be composed of two different subscales, we computed a confirmatory principal component analysis with Varimax rotation on the essentialism measure. Except for one item, two factors were obtained. Consistent with previous research (Demoulin, Leyens, & Yzerbyt, 2006), the two factors correspond to the two sides of the essentialism concept. On the one hand, items such as "inalterability," "immutability," "historical stability," and "necessity" refer to the perception of groups as being naturally defined; this factor represents "natural kind" essentialism. On the other hand, items such as "informativeness," "underlying reality," "similarity," and "exclusiveness" refer to the perception of groups as forming entities; this factor represents "entitative" essentialism.

For each factor, essentialism scores were computed by averaging the responses on the corresponding items ($\alpha = .77$ and .67, for entitative essentialism and natural kind essentialism, respectively).

Procedure

Participants arrived at the laboratory in groups ranging from two to six individuals. They were seated in separate cubicles and always thought that there were six participants in the study. Three experimental conditions were designed in order to manipulate the meaningfulness of categorization criteria of the groups. In the first condition (random), participants were randomly assigned by the experimenter to one of two groups, A and B. Participants were aware that the assignment was random but unaware of the distribution of the groups. In the second and third conditions, participants chose the groups to which they wanted to belong. Specifically, in condition 2 (colour) participants were asked to choose between the Blue and the Red group as a function of their preferred colour. In the last condition (work), participants were asked to choose whether they would like to work with Adults or Children after they completed their Psychology degree. All participants were asked to write down the name of their group on the first page of the questionnaire.

Participants in the colour and work conditions were asked to spend 5 minutes thinking and writing down what was unique about their group. In contrast, participants in the random condition had to write down what they thought about the impact of waste on the environment. The experimenter stopped the participants after 5 minutes and asked them to complete the rest of the questionnaire booklet, which was composed of the identification measure, six Tajfel matrices, the infra-humanization measure, and the essentialism scale. Finally, participants were fully debriefed and thanked for their participation.

RESULTS

Attribution of emotions

A 2 (target: in-group vs out-group) × 2 (emotion: primary vs secondary) × 3 (meaningfulness of categorization: random vs colour vs work) repeated measures ANOVA with the first two factors as within-participant variables and the last one as a between-participants variable was conducted on the number of emotions selected by the participants. Results showed a main effect of Target, $F(1, 44) = 9.80$, $p < .01$. Participants attributed more emotions to the in-group ($M = 1.34$, $SD = 0.69$) than to the out-group ($M = 0.95$, $SD = 0.69$). This main effect was qualified by a two-way interaction between Target and Emotion,

$F(2, 44) = 6.95$, $p < .02$, and a marginally significant three-way interaction of Target × Emotion × Meaningfulness of categorization, $F(2, 44) = 2.73$, $p < .08$. Because we had precise hypotheses regarding primary and secondary emotions, 2 (target: in-group vs out-group) × 3 (meaningfulness of categorization: random vs colour vs work) repeated measures ANOVAs were computed for each kind of emotion separately.

Secondary emotions. The only significant main effect concerned the target of attribution. Overall, participants selected more secondary emotions for the in-group ($M = 1.60$, $SD = 0.89$) than for the out-group ($M = 0.97$, $SD = 0.9$), $F(1, 44) = 34.92$, $p < .01$. As expected (Hypotheses 2 and 3), however, this main effect was qualified by a Target × Meaningfulness of categorization interaction, $F(2, 44) = 6.82$, $p < .01$ (see Table 1). One-way ANOVAs on the numbers of selected secondary emotions were computed separately for the in-group and the out-group. Results showed that the attributions of secondary emotions to the in-group differed as a function of categorization, $F(2, 44) = 5.5$, $p < .01$, but attribution of secondary emotions to the out-group did not, $F < 1$. Compared to the random condition, participants in the colour and work conditions attributed more secondary emotions to their in-group, $t(1, 31) = 3.01$, $p < .01$ and $t(1, 28) = 2.79$, $p < .01$, respectively. Moreover, participants in the random condition attributed as many secondary emotions to both groups $t(1, 15) = 1.0$, *ns*. In contrast, participants in the colour and work conditions attributed more secondary emotions to their in-group than to the relevant out-group ($t = 4.51$ and 4.37, $p < .001$, respectively).

Primary emotions. As Table 1 shows, participants attributed as many primary emotions to both groups in all conditions (all ps $> .05$).

In-group bias

The data from one participant were excluded because he misunderstood the task. We created in-group and out-group indices adding the points assigned in the in-group matrix and in the out-group matrix, respectively. Each index could vary from 37 to 144. A 2 (target: in-group vs out-group) × 3 (categorization criteria: random vs colour vs work) repeated measures ANOVA showed that, consistent with our hypothesis (Hypothesis 5), the only significant result was a main effect of the Target, $F(1, 43) = 68.94$, $p < .001$. In all

TABLE 1

Number of primary and secondary emotions attributed to in-groups and out-groups as a function of group assignment (numbers in parentheses are standard deviations)

Meaningfulness of categorization criteria	Secondary emotions				Primary emotions			
	In-group		Out-group		In-group		Out-group	
Random	1.00	(0.89)	0.87	(0.89)	1.03	(0.98)	0.93	(0.98)
Colour	1.94	(0.89)	0.88	(0.89)	0.79	(0.98)	0.79	(0.98)
Work	1.85	(0.89)	1.13	(0.89)	1.39	(0.98)	1.07	(0.98)

conditions, participants displayed an in-group bias in assigning more points to the in-group ($M = 109.4$, $SD = 16.75$) than to the out-group ($M = 72.26$, $SD = 14.24$). As Table 2 shows, results were highly similar in all conditions.

Correlations between in-group and out-group allocations in Tajfel's matrices and attributions of primary and secondary emotions to both groups were computed. As predicted (Hypothesis 6), none of the results were significant (all $rs < .22$, ns).

Essentialism

In order to assess the predictive role of our manipulation on both types of essentialism, we computed simple regression analyses. We coded the experimental condition factor using two independent contrasts ("$-2,1,1$" named C1, and "$0,1,-1$" named C2, for the random, colour, and work conditions, respectively). We expect only the first contrast C1 to predict essentialism. Thus, essentialism should be higher in the colour and work conditions than in the random condition. As expected, C1 reliably predicted entitative-essentialism, $b = 0.24$, $t(43) = 2.21$, $p < .05$, whereas C2 was nonsignificant, $b = 0.22$, $t = 1.17$, $t > .10$. There was no effect of the two contrasts on the "natural kind" essentialism scale, all $ts < 1$. This result is consistent with Demoulin et al.'s (2006) finding that chosen social categories are defined primarily in terms of the entitative-essentialism factor.

Identification

Similar to the essentialism scale, identification was regressed on the two independent contrasts (C1 and C2) simultaneously. Results revealed that, consistent with our hypothesis, the first contrast C1 significantly predicted identification scores, $b = 0.29$, $t(43) = 2.88$, $p < .01$, whereas the second contrast did not, $b = 0.25$, $t(43) = 1.46$, $p > .10$. This result is consistent with Hypothesis 2.

Mediational analyses

We obtained a single infra-humanization bias score by subtracting the number of secondary emotions attributed to the out-group from the number of secondary emotions attributed to the in-group (i.e., higher scores mean greater attribution of secondary emotions to the in-group, that is, greater infra-humanization). To assess the mediating roles of the entitative essentialism and identification on infra-humanization biases (Hypothesis 3), we performed a series of simple and multiple regression analyses (Kenny, Kashy, & Bolger, 1998). As before, the experimental factor was coded using two independent contrasts, C1 and C2. Again, we expected only the first contrast C1 to predict infra-humanization.

As a first step in the analyses, we regressed the infra-humanization scores on the two independent contrasts. As predicted, only the first contrast C1

TABLE 2

Number of points allocated to in-groups and out-groups as a function of group assignment (numbers in parentheses are standard deviations)

Meaningfulness of categorization criteria	Tajfel's matrices			
	In-group		Out-group	
Random	107.37	(16.61)	72.00	(12.62)
Colour	111.18	(18.99)	69.94	(17.52)
Work	109.64	(15.1)	75.86	(12.24)

significantly predicted infra-humanization, $b = 0.23$, $t(43) = 3.02$, $p < .01$ and $b = -0.11$, $t < 1$, ns, for C1 and C2 respectively. In a second step, we regressed infra-humanization scores on essentialism and identification, separately. As predicted, results show that infra-humanization is related to both variables: $b = 0.29$, $t(43) = 2.78$, $p < .01$, $b = 0.36$, $t(43) = 3.52$, $p < .01$, for essentialism and identification, respectively. Finally, infra-humanization was regressed on the two mediators and the two contrasts simultaneously. Results revealed that the link between C1 and infra-humanization became nonsignificant when the two mediators were included in the model, $b = 0.12$, $t(43) = 1.61$, $p > .10$. Importantly, identification remained a significant predictor of infra-humanization effects, $b = 0.25$, $t(43) = 2.10$, $p < .05$, whereas the link between essentialism and infra-humanization was no longer reliable, $b = 0.13$, $t(43) = 1.22$, $p > .10$. The fact that entitative-essentialism no longer predicts infra-humanization scores in the last regression step could be, in part, due to the collinearity between the two measures, $r(44) = .52$, $p < .01$.

DISCUSSION

Consistent with our hypothesis, participants in both meaningful conditions attributed more secondary emotions to the in-group than to the out-group. It could be argued that the absence of infra-humanization in the nonmeaningful condition is due to a general absence of discrimination. However, participants in all three conditions discriminated by allocating more points to their in-group than the out-group, but these allocations did not differ as a function of the conditions. Finally, in-group bias was uncorrelated with infra-humanization. Thus, categorization alone is sufficient to obtain in-group favouritism (but see Gaertner & Insko, 2001) but insufficient to produce infra-humanization. Infra-humanization needs more than just simple categorization. It needs meaningfulness.

Contrary to results obtained with realistic groups (Demoulin et al., 2005), the present effects exclusively concerned the in-group. Participants did not derogate the out-group more on secondary emotions in the meaningful conditions. They did, however, favour the in-group by attributing it more secondary emotions in the meaningful conditions than in the random situation. Such findings may be due to a floor effect. The attribution of secondary emotions in the random condition was so low that it might have been

difficult to lower this number in the other conditions. Nonetheless, the distinction between favouring the in-group and derogating the out-group is not unknown in the minimal group paradigm. It has been referred to as the positive-negative asymmetry (Mummendey & Otten, 1998) Further studies are needed to investigate whether the lack of out-group derogation on the infra-humanization measure is a simple artifact effect.

The results of the present study also indicated that infra-humanization was associated with both in-group identification and entitative essentialism. The more the group is perceived as essential and the more people identify with their in-group, the higher the infra-humanization. Although unreported analyses revealed that in-group essentialism did mediate the link between categorization meaningfulness and infra-humanization, essentialism did not seem to explain variance over and above the variance explained by in-group identification. This unexpected result could in part be explained by the dependence that was found between the two mediators. The high correlation between in-group identification and in-group essentialism indicates that both concepts are interrelated. Further studies using more realistic groups should be carried out to determine whether identification and essentialism independently explain part of the variance found in infra-humanization or whether identification alone is sufficient to produce the effect.

Infra-humanization biases are quite powerful. As a matter of fact, the simple categorization in quasi-minimal groups was sufficient for the effect to emerge. Other attempts at finding little or no infra-humanization should be pursued. One potential way to diminish infra-humanization biases is proposed by the Common In-group Model (Gaertner & Dovidio, 2000). Given that interdependent groups are prone to infra-humanization (Cortes et al., 2005), future researchers may want to investigating the impact of inducing a superordinate identity on infra-humanization. Ongoing research by Gaunt and colleagues (raw data) with Jewish and Arab Israelis indicates that people who see themselves as members of a common in-group infra-humanize less than people who conceive the groups as separate entities.

The present study is an important addition to Tajfel's proposition (1981) that, whereas depersonalization occurs in both minimal groups and actual warfare, dehumanization takes place only on the latter. Our data suggest that infra-humanization falls in between these two extremes as it is observed in quasi but not purely minimal groups.

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