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# Humanizing Outgroups Through Multiple Categorization: The Roles of Individuation and Threat

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## Abstract

In three studies, we examined the impact of multiple categorization on intergroup dehumanization. Study 1 showed that perceiving members of a rival university along multiple versus simple categorical dimensions enhanced the tendency to attribute human traits to this group. Study 2 showed that multiple versus simple categorization of immigrants increased the attribution of uniquely human emotions to them. This effect was explained by the sequential mediation of increased individuation of the outgroup and reduced outgroup threat. Study 3 replicated this sequential mediation model and introduced a novel way of measuring humanization in which participants generated attributes corresponding to the outgroup in a free response format. Participants generated more uniquely human traits in the multiple versus simple categorization conditions. We discuss the theoretical implications of these findings and consider their role in informing and improving efforts to ameliorate contemporary forms of intergroup discrimination.

## Keywords

dehumanization, multiple categorization, perceived threat, individuation

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I am Charlie. I am a policeman. I am a Jewish. I am a Muslim. I am a Christian. I am an atheist.

These were the slogans that 1.5 million people chanted at the march in support of Charlie Hebdo after the massacre in Paris in 2015. These statements sought to defend the value of pluralistic societies by affirming the multiple affiliations of citizens, while asserting that we all have equal worth as *human beings*. In the present research, we consider the value of encouraging a focus on multiple affiliations for efforts to enhance humanization of outgroup members, and examine the mediating roles of individuation and perceived threat as explanatory mechanisms underlying this effect.

## Intergroup Dehumanization

Dehumanization describes the tendency to consider outgroup members as less human than ingroup members (Haslam, 2006). Leyens and colleagues demonstrated that secondary emotions, which are understood to be unique to humans, are attributed to outgroup members to a lesser extent than ingroup members providing a subtle denial of the outgroup humanity (for reviews, see Leyens et al., 2003; Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007; Leyens et al., 2001). Haslam (2006) went on to distinguish between two

different facets of dehumanization, that is, the denial of uniquely human characteristics such as secondary emotions and intellectual abilities, and the denial of human nature characteristics such as emotional responsiveness and agency. Research has now found extensive evidence for both forms of dehumanization across a variety of intergroup contexts (for review, see Haslam & Loughnan, 2014). Importantly, failing to see outgroup members as human beings serves to justify their discrimination. Dehumanization is associated with increased aggression and violence (Bastian, Denson, & Haslam, 2013; Viki, Osgood, & Phillips, 2013) as well as reduced pro-social behavior toward outgroup members (Cuddy, Rock, & Norton, 2007; Vaes, Paladino, & Leyens, 2002).

Although a large body of research has now demonstrated the widespread occurrence of dehumanization and explored

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its consequences for social behavior, relatively little is known about how dehumanization can be reduced and humanization of the outgroup promoted (Haslam & Loughnan, 2014). Some recent work surrounding the interspecies model of prejudice has shown that emphasizing animals' similarities with humans can result in reduced dehumanization of immigrants (Costello & Hodson, 2010; Hodson, MacInnis, & Costello, 2013). Intergroup contact is also associated with less dehumanizing perceptions of the contacted outgroup (Brown, Eller, Leeds, & Stace, 2007; Capozza, Trifiletti, Vezzali, & Favara, 2013; Tam et al., 2007). In the present research, we provide evidence of the utility of another technique to promote the re-humanization of outgroup members: multiple categorization.

### Multiple Categorization

The distinction between "us" (self-including "in"-groups) and "them" (self-excluding "out"-groups) appears to be sufficient to produce intergroup discrimination (Tajfel, Billig, Bundy, & Flament, 1971). If categorization provides the basis for intergroup differentiation, it follows that reducing the salience of intergroup distinctions may reduce bias. Although people are cognitively predisposed to rely on simple categorizations, they are also able to handle a greater number of categories when forming impressions of others (Crisp & Meleady, 2012). Specifically, research suggests that, individuals are able to simultaneously process up to four categorical dimensions and still maintain intergroup differentiations in forming impression of others (Vanbeselaere, 1987). However, when the number of categories is augmented further, the use of any one category as a basis of judgments decreases (Halford, Baker, McCredden, & Bain, 2005). Crisp and Hewstone's (2007) differentiation-decategorization model contends that when multiple criteria for social categorization are available, category-orientated processes no longer provide an efficient or meaningful way of making judgments, eliciting the shift to a more individuated mode of perception. This change in the mode of processing is called *decategorization* (Crisp & Hewstone, 2007) and allows the perceiver to develop a more personalized and less homogeneous perception of outgroup members, thereby debiasing social perceptions (Ensari & Miller, 2001; Fiske & Neuberg, 1990).

Evidence for the effectiveness of this approach comes from Crisp, Hewstone, and Rubin (2001). The authors used an intervention comprising a fix-format presentation of six categorical dimensions of multiple categorization (university affiliation, gender, age, nationality, living place, course of study) that were either shared (referred to here as *multiple ingroup*) or not shared (referred to here as *multiple outgroup*) between the participants and the target. Specifically, participants were asked to form an impression of a group target (Bristol vs. Cardiff students) portrayed in terms of simple categorization (University affiliation), or *multiple ingroup* or

*multiple outgroup category combinations* (i.e., university affiliations plus five additional categorical dimensions shared or unshared between participants and the target). Findings showed a reduction in prejudice toward rival university students under multiple categorization conditions regardless of the type of multiple categorization adopted (i.e., multiple ingroup or multiple outgroup). These results have also been replicated when participants were asked to generate multiple bases for categorization to describe an outgroup target instead of using a fix-format presentation of multiple categorizations (Hall & Crisp, 2005). The prejudice-reducing effects of multiple categorization have been observed on traditional points allocations and affective prejudice measures (Crisp, Hewstone, & Rubin, 2001), on measures tapping perceivers' implicit tendency to process information differentially as a function of category membership (Crisp, Hewstone, & Cairns, 2001), and even on linguistic markers of outgroup discrimination (Prati, Menegatti, & Rubini, 2015).

### Using Multiple Categorization to Tackle Dehumanization

Albarello and Rubini (2012) recently tested the utility of multiple categorization as an intervention to reduce outgroup dehumanization. Participants were presented with descriptions of an outgroup target that varied in terms of the number of categorical dimensions used to describe it. In the simple categorization condition, the target was described as Black or White. In the multiple categorization condition, in addition to the information on race, the target was portrayed by means of five additional categorical dimensions (e.g., religion, age, gender, nationality, origins) that were in part shared and in part unshared between participants and the target (referred to here as *multiple mixed*). Results showed that multiple categorization compared with simple categorization successfully reduced the tendency for individuals to dehumanize members of the outgroup. The present research aimed to continue this line of research and provide further evidence for the ability of multiple categorization to reduce intergroup dehumanization. We sought to extend previous research in three different ways. First, we investigated the processes underlying the effects of multiple categorization on dehumanization for the first time. As discussed, multiple categorization is thought to function by removing the cognitive basis of intergroup bias by eliciting the shift from a categorical to an individuated mode of perception (Crisp & Hewstone, 2007). Accordingly, we expected the multiple categorization effects to be explained by a process of individuation. We also investigated the role of perceived threat. Several studies have shown perceived outgroup threat to be an antecedent of dehumanization. Staub (1989) and Opatow (1990), for instance, contended that perceiving goals and intentions of the outgroup as threatening for the ingroup lead to the belief of outgroups as undeserving of humane

treatments (see also Louis, Esses, & Lalonde, 2013; Maoz & McCauley, 2008). We therefore examined whether perceived outgroup threat may represent an additional, affective process underlying multiple categorization effects on the reduction of intergroup dehumanization. Specifically, we expected a chain of effects whereby multiple categorization should lead to increased individuation of outgroup members that should then attenuate perceptions of threat, and in turn, reduce dehumanization by increasing outgroup members' humanization.

As a secondary aim, we tested the effectiveness of different variants of the multiple categorization technique. As noted above, in Albarello and Rubini's (2012) manipulation, some of the traits used to describe the outgroup were shared with the ingroup and some were unshared ("multiple mixed"). Because this was a new variant of the multiple categorization technique to that used in earlier work, and also applied to a new measure of prejudice (dehumanization), we cannot confidently infer whether it was decategorization that drove this effect (as in previous multiple categorization work), or some other processes. To provide a firmer test of the effectiveness of the multiple categorization, and a clear link with earlier research, here we also included conditions in which the outgroup member was described solely in terms of traits shared with the ingroup, and traits that were all unshared with the outgroup (as per Crisp, Hewstone, & Rubin, 2001). Our multiple categorization interventions were each composed of six category dimensions, which has previously been recommended as a comfortable margin to achieve decategorization (Crisp & Hewstone, 2007; Halford et al., 2005).

Finally, we introduce a new measure of humanization in which, rather than rating outgroup members against a number of pre-defined attributes, participants freely generated traits to describe the outgroup, which were then coded as either uniquely human or non-uniquely human. Including a more generative measure in this way allows us to test the effectiveness of the multiple categorization interventions not only at the level of attribution of human characteristics but also at the level of encoding processes.

## The Present Research

In three studies, we tested the ability of multiple categorization to reduce dehumanization and examined the processes underlying this effect. Study 1 sought initial evidence that being compelled to think about multiple identities *versus* simple categorization of a rival outgroup target would encourage its humanization. The proposed mediating role of individuation in explaining the humanizing effects of multiple categorization was also tested. In Study 2, we went on to examine the strength of the multiple categorization effect by assessing its impact on attitudes toward a more highly discriminated outgroup: immigrants. Here, we also examined the sequential role of individuation of outgroup target and

perceived outgroup threat underlying the effect of multiple categorization on the humanization of the outgroup target. In Study 3, we sought to replicate this sequential mediational model using a new measure of humanization in which participants freely generated attributes describing the outgroup target.

## Study 1

In Study 1, we choose an inter-university rivalry as the intergroup context. Since the psychology departments of the universities of Bologna and Padova compete for prestige and awards in Italy, the latter represents a salient rival group for the former. We asked Bologna University students to evaluate Padova University students. It was expected that multiple categorization of the outgroup target would force individuals to switch from a category-based, to a more individuated mode of social perception, and thereby reduce intergroup dehumanization tendencies by increasing attribution of humanness to the outgroup target. We also tested an alternative explanatory process whereby multiple categorization may promote recategorization of outgroup and ingroup members as a single, more inclusive common ingroup (Gaertner & Dovidio, 2000) that has previously been suggested to attenuate intergroup dehumanization (Capozza et al., 2013).

## Method

**Pilot study.** A pilot study was first conducted to confirm that University affiliation and the additional social categories selected for the multiple categorization intervention were perceived as equally meaningful by participants. Fifty-one participants ( $M_{\text{age}} = 21.41$ ,  $SD = 1.02$ ; 66% women) rated on Likert-type scales from 1 (*not at all*) to 7 (*very much*) to what extent they perceived important the university affiliation and the five additional social categories selected that were age, music preference, food preference, favorite football team, and sport preference.<sup>1</sup> Paired sample *t* tests showed no significant difference in perceived importance between these categories ( $M_{\text{University}} = 4.25$ ,  $SD = 1.89$ ;  $M_{\text{age}} = 4.43$ ,  $SD = 1.97$ ;  $M_{\text{music}} = 4.35$ ,  $SD = 1.42$ ;  $M_{\text{food}} = 3.82$ ,  $SD = 1.41$ ;  $M_{\text{football team}} = 4.04$ ,  $SD = 1.34$ ;  $M_{\text{sport}} = 3.90$ ,  $SD = 1.97$ ), all  $ps > .06$ .

**Participants and design.** Ninety-five students of psychology ( $M_{\text{age}} = 21.45$ ,  $SD = 0.92$ ; 69% women) from Bologna University participated in the main study on a voluntary basis. They were randomly assigned to one of the four categorization conditions (simple, multiple ingroup, multiple outgroup, multiple mixed) in a between-subjects design.

**Procedure and materials.** Before completing the experiment, participants were asked to indicate their affiliations on each of the social categories used in the manipulation to ensure

that we included only those who were “ingroup members” in each category (i.e., being Bologna University students, 18 or older, preferring rock music, being non-vegetarians, being non-athletic, and supporter of local football team). Those who did not belong to each ingroup were not asked to complete the questionnaire.

Participants were then presented with a description of Padova University students in one of four categorization conditions. In the *simple categorization* condition, the only information participants received about the target was the fact that they were a Padova University student. In the *multiple ingroup categorization* condition, the Padova University students were portrayed as being 18 or older, preferring rock music, being non-vegetarian, supporting same football team, and not being athletic (five affiliations shared by participants). In the *multiple outgroup categorization* condition, the Padova University students were portrayed as younger than 18 years, preferring classic music, being vegetarian, supporting a different football team, and being athletic (five participants’ opposite affiliations). Finally, in the *multiple mixed categorization* condition, the Padova University students were portrayed as being 18 or older, being non-vegetarian, supporting same football team (ingroups), preferring classic music, and being athletic (outgroups). Following the procedure of Crisp, Hewstone, and Rubin (2001), participants were asked to write down their thoughts about the people described to reinforce the manipulation and ensure that participants formed an impression of the targets before completing the dependent variables. Participants then completed the dependent measures related to individuation, super-ordinate categorization, attribution of human traits to the target, and participants’ identification with the social affiliations at stake.

**Individuation.** Participants were asked to indicate, “How much do you view Padova students as . . .” (1 = *individuals*, 7 = *group members*), “To what extent do you think of Padova students as unique individuals” (1 = *not at all*, 7 = *very much*), “To what extent do you think Padova students qualify as typical group members” (1 = *not at all*, 7 = *very much*), and “How similar are Padova students to other members of the same group?” (1 = *not at all similar*, 7 = *very similar*). Items 1, 3, and 4 were reversed coded, such that higher scores on each items represented higher individuation (Hutter, Wood, & Turner, 2013) and collapsed into a single composite score ( $\alpha = .69$ ).

**Super-ordinate categorization.** Participants indicated, “To what extent do you perceive Padova students and yourself as members of different groups, and, at the same time, as members of the same group?” and “To what extent do you perceive that you have characteristics in common with Padova students and characteristic that are different?” (1 = *not at all*, 7 = *very much*). An index of super-ordinate categorization was created ( $\alpha = .73$ ).

**Human traits.** A list of eight uniquely human (*positive*: optimistic, broadminded, trusting, humble; *negative*: insecure, irresponsible, negligent, arrogant) and eight non-uniquely human traits (*positive*: curious, sociable, defensive, hedonistic; *negative*: conforming, nervous, instinctive, uncooperative) was sampled from previous dehumanization research (Loughnan et al., 2010). Participants rated to what extent the target group possessed each trait on a 7-point scale (1 = *not at all*, 7 = *very much*). The order of presentation was randomized. Traits scores were collapsed in uniquely human traits ( $\alpha = .81$ ; positive  $\alpha = .77$ ; negative  $\alpha = .84$ ) and non-uniquely human traits ( $\alpha = .75$ ; positive  $\alpha = .72$ ; negative  $\alpha = .76$ ).

**Identification.** Participants rated the extent to which they identified with each of the social affiliations considered in multiple categorization conditions on a 7-point scale (1 = *not at all*, 7 = *very much*).

## Results and Discussion

**Data preparation.** Paired sample *t* tests confirmed that there were no significant differences between participants’ identification across the six groups that formed the basis for the intervention ( $M_{\text{University}} = 4.14$ ,  $SD = 1.42$ ;  $M_{\text{age}} = 4.27$ ,  $SD = 1.59$ ;  $M_{\text{music}} = 4.18$ ,  $SD = 1.28$ ;  $M_{\text{food}} = 4.00$ ,  $SD = 1.15$ ;  $M_{\text{football team}} = 4.05$ ,  $SD = 1.62$ ;  $M_{\text{sport}} = 4.11$ ,  $SD = 2.20$ ), all  $p$ s > .411. Gender was not found to produce any significant effects or interactions, and was therefore not considered within the subsequent analyses.

**Analytic strategy.** Planned contrasts analyses were conducted (cf. Crisp, Hewstone, & Rubin, 2001). The order of all contrasts was simple versus multiple ingroup versus multiple outgroup versus multiple mixed categorization. Three contrasts were created and computed as follows. Contrast 1 was  $-3, +1, +1$ , and  $+1$ , and tested whether the target group was attributed human traits to a higher extent in the multiple ingroup, multiple outgroup, and multiple mixed categorizations compared with the simple categorization condition. Contrast 2 was  $0, +1, -2$ , and  $+1$ , and tested whether there was any difference in the attribution of human traits between multiple outgroup and multiple ingroup, and multiple mixed categorizations. Contrast 3 was  $0, +1, 0$ , and  $-1$ , and tested whether the target group in multiple mixed categorization was attributed human traits to a less extent compared with multiple ingroup categorization. Support for the hypothesis that all the types of multiple categorizations would lead to higher attribution of uniquely human traits to outgroup members compared with the simple categorization is indicated if Contrast 1 is significant, but Contrasts 2 and 3 are non-significant.<sup>2</sup>

**Human traits.** It was hypothesized that the humanizing effect of the intervention would be reflected in the attribution

**Table 1.** Individuation, Super-Ordinate Categorization and Human Traits as a Function of Categorization Type (Study 1).

	Categorization type							
	Simple		Multiple ingroup		Multiple outgroup		Multiple mixed	
	M	SD	M	SD	M	SD	M	SD
Individuation	3.79	1.20	4.78	1.25	4.71	1.18	5.00	0.94
Super-ordinate categorization	4.49	1.05	4.68	1.49	4.04	1.34	4.43	1.29
Positive non-uniquely human traits	3.96	0.59	4.09	0.74	3.88	0.67	3.66	0.60
Negative non-uniquely human traits	4.29	0.86	4.41	1.36	4.10	0.70	4.06	0.78
Positive uniquely human traits	3.72	0.60	4.60	0.79	4.61	0.75	4.30	0.74
Negative uniquely human traits	3.58	0.55	4.36	0.74	4.51	0.50	4.44	0.76

of uniquely human traits to a higher extent in all conditions of multiple compared with simple categorization condition.<sup>3</sup> A 4 (categorization type: simple, multiple ingroup, multiple outgroup, multiple mixed)  $\times$  2 (trait valence: positive, negative) mixed model analysis of variance (ANOVA) was conducted on uniquely human traits, with repeated measures on the second factor. Results revealed a main effect of categorization type,  $F(3, 91) = 8.112, p = .002, \eta^2 = .212$ . There was no effect of trait valence,  $F(1, 91) = 1.617, p = .215, \eta^2 = .013$ , and so positive and negative traits scores were collapsed in one index of uniquely human traits. Contrast 1,  $t(91) = 4.866, p = .001, d = 1.184$ , was significant. This suggests that in conditions of multiple categorization, participants attributed uniquely human traits to the outgroup target to a higher extent compared with the simple categorization condition (see Table 1). Contrast 2,  $t(91) = -0.730, p = .505, d = 0.113$ , and Contrast 3,  $t(91) = 0.502, p = .617, d = 0.124$ , were not significant, showing no difference in the attribution of uniquely human traits to Padova students among the different multiple categorization conditions.

We also examined the effect of the multiple categorization condition on the attribution of non-uniquely human traits. A second, 4 (categorization type: simple, multiple ingroup, multiple outgroup, multiple mixed)  $\times$  2 (trait valence: positive, negative) mixed model ANOVA with repeated measures on the second factor was conducted. Results revealed a main effect of trait valence,  $F(1, 91) = 10.884, p = .002, \eta^2 = .11$ . Negative non-uniquely human traits ( $M = 4.69, SD = 0.79$ ) were attributed to the target group to a higher extent than positive non-uniquely human traits ( $M = 4.23, SD = 0.73$ ). No effect of categorization type was found,  $F(3, 91) = 1.802, p = .154, \eta^2 = .052$ . Contrasts were non-significant,  $ps > .172$ , showing no difference between conditions in non-uniquely human traits scores.

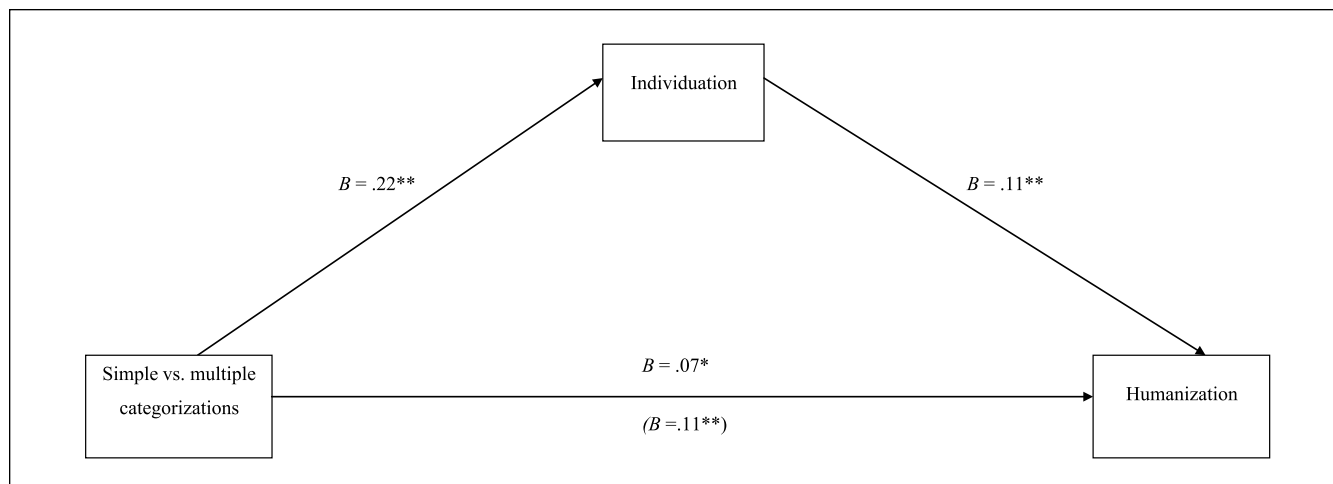
**Individuation.** A one-way ANOVA on the individuation measure showed a main effect of categorization type,  $F(3, 91) = 3.289, p = .005, \eta^2 = .095$ . Contrasts 1,  $t(91) = 3.032, p = .003, d = 0.984$  demonstrated that, in multiple categorization conditions Padova students were perceived as single individuals to a higher extent compared to simple

categorization condition. Contrast 2,  $t(91) = 0.539, p = .591, d = -0.142$ , and Contrast 3,  $t(91) = -0.611, p = .543, d = -0.196$ , were not significant, showing no difference in individuation between the different variants of the multiple categorization intervention.

**Super-ordinate categorization.** In contrast, a one-way ANOVA on the super-ordinate categorization measure showed no effect of categorization type,  $F(3, 91) = 1.297, p = .286, \eta^2 = .044$ . Contrasts were non-significant,  $ps > .87$ , showing no difference between any categorization conditions.

**Mediational analysis.** As multiple categorization was shown to increase the individuation of the outgroup (and not to affect perceptions of a super-ordinate identity), we examined whether this process explained the effect of multiple categorization on the attribution of uniquely human traits to the outgroup target. For the analysis, Contrast 1 (simple vs. multiple ingroup, outgroup and mixed categorizations) was used as the independent variable, and Contrasts 2 (multiple ingroup and multiple mixed vs. multiple outgroup categorization) and 3 (multiple ingroup vs. multiple mixed categorization) were entered as covariates. A bootstrapped procedure (Preacher & Hayes, 2008) with 5,000 re-samples was used. The point of estimate for the indirect effect was 0.057 ( $SE = .023$ ), with a 95% bias-corrected confidence interval of 0.0038 to 0.0533. Since zero falls outside this interval, we can conclude that the indirect effect of multiple categorization on humanization of the outgroup target via individuation was significant (see Figure 1).

The results of Study 1 showed that perceiving a rival outgroup target through multiple categorization improves the perception of its humanness relative to the simple categorization condition. Effects were consistent across three different variants of the multiple categorization intervention. Even when the outgroup target was defined entirely by multiple outgroup categories, it was more positively evaluated than when it was defined by a single outgroup identity. Multiple categorization effects were explained by the hypothesized computational shift from a categorization to an individuated model of perception. Findings ruled out the role of an



**Figure 1.** Simple mediation test of the relationship between simple versus multiple categorizations and humanization through individuation (Study 1).

\* $p < .01$ . \*\* $p < .05$ .

alternative underlying process in the form of the recategorization of the outgroup into a super-ordinate representation.

## Study 2

Study 2 sought to replicate the results of Study 1 in a different intergroup context. The effect of the multiple categorization on the dehumanization of immigrants was tested. Participants were presented with a description of immigrants under either simple or multiple categorization conditions. In line with Study 1, it was expected that multiple categorization, whether a combination of shared, unshared or mixed categories between participants and the immigrant target, would successfully reduce dehumanization. Study 2 also investigated the possible role of perceived threat underlying multiple categorization effects. Previous research has established outgroup threat as an antecedent of dehumanization (e.g., Louis et al., 2013; Maoz & McCauley, 2008; Opatow, 1990; Staub, 1989). Immigrants as a group are generally perceived as competitive and threatening (De Vreese & Boomgaarden, 2005; Esses, Jackson, & Armstrong, 1998; McLaren, 2003); accordingly, we expected to observe perceptions of threat under simple categorization. However, it was predicted that increasing the number of categories simultaneously attributed to this outgroup target should remove the cognitive basis for outgroup threat. We therefore predicted and tested a sequential mediation model in which multiple categorization would initiate an individuation process that in turn would attenuate group-based threat responses, thereby reducing dehumanization.

## Method

**Participants and design.** One hundred thirteen undergraduate students ( $M_{\text{age}} = 21.45$ ,  $SD = 2.42$ ; 74% women) at Bologna

University participated in this study on a voluntary basis. They were randomly assigned to one of the four categorization conditions (simple, multiple ingroup, multiple outgroup, multiple mixed) in a between-subjects design.

**Procedure and materials.** Before completing the experiment, participants were asked to indicate on a 7-point scale the extent to which they identify with the social groups within the manipulation<sup>4</sup> (identification measure). This was also done to ensure that only those who were Italians, young, same gender as the target described, students, without children, and living in Bologna were included. For the experimental manipulation, participants were asked to describe their impressions on immigrants presented in one of four conditions: *simple categorization* (e.g., immigrants), *multiple ingroup categorization* (e.g., immigrants who are young, students, living in the same town, without children, and of the same gender as the participants), *multiple outgroup categorization* (e.g., immigrants who are middle aged, workers, living in countryside, with children, and of the opposite gender of the participants), and *multiple mixed categorization* (e.g., youngsters, students, living in the same town, with children, and of the opposite gender of the participants), as per Study 1. Participants subsequently completed the measures of individuation, perceived outgroup threat, and the attribution of secondary and primary emotions.

**Individuation.** We measured participants' individuation of immigrants ( $\alpha = .83$ ) as in Study 1.

**Perceived threat.** Participants completed six items adapted from Stephan and Stephan's (2000) measure of perceived threat from immigrants. They were asked to assess on a 7-point Likert-type scale (1 = *not at all*, 7 = *very much*) the extent to which they felt (a) worried, (b) afraid, and

**Table 2.** Individuation, Perceived Threat, and Secondary and Primary Emotions as a Function of Categorization Type (Study 2).

	Categorization type							
	Simple		Multiple ingroup		Multiple outgroup		Multiple mixed	
	M	SD	M	SD	M	SD	M	SD
Individuation	3.26	1.59	4.53	1.41	4.77	1.22	4.70	1.46
Perceived threat	4.52	1.09	3.51	1.41	3.48	1.28	2.95	1.09
Secondary emotions	3.27	0.68	3.96	0.63	3.90	0.68	4.00	0.54
Primary emotions	5.48	1.23	4.86	1.77	4.77	1.10	5.37	1.34

(c) threatened by immigrants (symbolic threat,  $\alpha = .82$ ), and the extent to which they thought (d) the status, (e) economical resources, and (f) achievements gained by immigrants were likely to damage Italians (realistic threat,  $\alpha = .92$ ).

**Secondary and primary emotions.** Participants were asked to define how much they thought the target immigrant group experienced 12 emotions compared with the Italians on a 7-point scale (1 = *infrequently experiences*, 7 = *frequently experiences*). Emotional terms were chosen from Paladino and Vaes's (2000) pre-test conducted on the Italian translations of emotions. These emotional experiences consisted of six secondary emotions (*positive*: hope, admiration, optimism; *negative*: pessimism, regret, remorse) and six primary emotions (*positive*: pleasure, surprise, attraction; *negative*: anger, disgust, fear). The order of the emotions was randomized. Following Albarello and Rubini's (2012) procedure, emotions scores were collapsed in secondary emotions (positive  $\alpha = .75$ ; negative  $\alpha = .67$ ) and primary emotions (positive  $\alpha = .89$ ; negative  $\alpha = .91$ ). Ratings of secondary emotions ( $\alpha = .71$ ) and primary emotions ( $\alpha = .90$ ) were then averaged in mean scores.

At the end of the questionnaire, participants were also asked to write down the nationality of the immigrants they thought about to control for the heterogeneity of this outgroup target.<sup>5</sup>

## Results and Discussion

**Data preparation.** To rule out the possibility that thinking about a specific nationality would affect the efficacy of the manipulation, immigrants' most cited nationalities (Tunisia, Albania, Morocco, Senegal, Romania) were entered in a series of ANOVAs on dependent measures. Results revealed no effect of immigrants' nationalities on secondary emotions,  $F(5, 107) = 0.941, p = .459, \eta^2 = .050$ , neither on symbolic threat,  $F(5, 107) = 0.775, p = .569, \eta^2 = .031$ ; nor on realistic threat,  $F(5, 107) = 1.33, p = .250, \eta^2 = .06$ ; or on individuation,  $F(5, 107) = 1.044, p = .392, \eta^2 = .048$ .

Paired sample *t* tests also showed no significant differences between participants' identification with the social categories included ( $M_{\text{nationality}} = 5.082, SD = 1.70$ ;  $M_{\text{gender}} = 5.203, SD = 1.71$ ;  $M_{\text{age}} = 4.995, SD = 1.80$ ;  $M_{\text{parenthood}} = 5.103,$

$SD = 1.71$ ;  $M_{\text{occupation}} = 4.926, SD = 1.71$ ;  $M_{\text{residence}} = 5.194, SD = 1.64$ ), all  $ps > .211$ . We found no significant effect of participants' gender across all dependent variables.

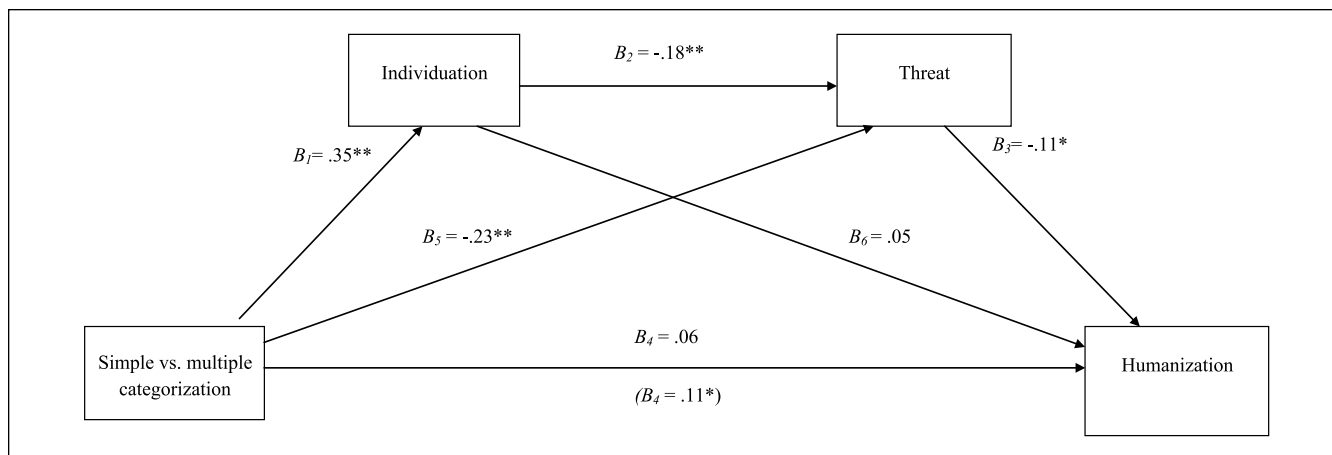
**Analytic strategy.** The same three contrasts used in Study 1 were used.<sup>6</sup>

**Secondary and primary emotions.** It was hypothesized that the humanizing effect of the intervention would be reflected in the attribution of secondary (but not primary) emotions to a higher extent under multiple compared with simple categorizations of immigrants.<sup>7</sup>

A 4 (categorization type: simple, multiple ingroup, multiple outgroup, multiple mixed)  $\times$  2 (emotion valence: positive, negative) mixed model ANOVA with repeated measures on the second factor was conducted on secondary emotions. A significant effect of categorization type was found,  $F(3, 108) = 12.507, p = .001, \eta^2 = .236$ . No effect of emotion valence,  $F(1, 108) = 0.115, p = .743, \eta^2 = .000$ , was found and positive and negative emotion scores were therefore collapsed in one index of secondary emotions for the contrast analysis. Contrast 1,  $t(108) = 3.382, p = .001, d = -1.075$ , was significant, indicating that secondary emotions were attributed to immigrants to a higher extent in all multiple categorization conditions compared with those in the simple condition (see Table 2). Contrast 2,  $t(108) = 0.251, p = .802, d = -0.123$ , and Contrast 3,  $t(108) = -0.836, p = .405, d = 0.068$ , were not significant, showing no difference between the three multiple conditions.

We also examined the effect of the multiple categorization condition on the attribution of primary emotions. A 4 (categorization type: simple, multiple ingroup, multiple outgroup, multiple mixed)  $\times$  2 (emotions valence: positive, negative) ANOVA with repeated measures on the second factor was conducted. A significant main effect of emotion valence was observed,  $F(1, 108) = 12.992, p = .001, \eta^2 = .105$ , demonstrating that positive emotions ( $M = 5.25, SD = 0.14$ ) were attributed to immigrants to a higher extent compared with negative emotions ( $M = 4.99, SD = 0.13$ ). There was no effect of categorization type,  $F(3, 108) = 1.826, p = .147, \eta^2 = .041$ . Contrasts were non-significant,  $ps > .084$ , showing no difference between conditions in primary emotions scores.





**Figure 2.** Multiple mediation test of the relationship between simple versus multiple categorizations and humanization through individuation and perceived threat (Study 2).

\* $p < .01$ . \*\* $p < .05$ .

**Individuation.** One-way ANOVA on the individuation measure showed a main effect of categorization type,  $F(3, 109) = 9.058, p = .001, \eta^2 = .196$ . As in Study 1, Contrast 1,  $t(108) = 4.732, p = .001, d = -0.956$ , was significant. Immigrants were perceived as individuals to a higher extent in multiple compared with simple categorization. Contrast 2,  $t(108) = -0.469, p = .640, d = -0.111$ , and Contrast 3,  $t(108) = -0.452, p = .652, d = -.243$ , were not significant, showing no difference between multiple categorization conditions in the individuation of immigrants.

**Perceived threat.** A 4 (categorization type: simple, multiple ingroup, multiple outgroup, multiple mixed)  $\times$  2 (threat: realistic, symbolic) mixed model ANOVA with repeated measures on the second factor was conducted. Results showed a significant effect of categorization type,  $F(3, 109) = 4.855, p = .003, \eta^2 = .126$ . There was no main effect of type of threat,  $F(3, 108) = 0.823, p = .367, \eta^2 = .010$ , and so perceived symbolic and realistic threat items were collapsed into one threat index for the contrast analyses. Contrast 1 was significant,  $t(108) = -4.724, p = .001, d = 0.806$ . Perceived threat was reduced across multiple categorization conditions compared with the simple condition. Contrast 2,  $t(108) = -0.909, p = .365, d = 0.121$ , and Contrast 3,  $t(108) = 1.749, p = .083, d = 1.113$ , were not significant, showing no difference between multiple categorization conditions in perceived threat from immigrants.

**Mediational analysis.** A bootstrapped analysis was conducted to test whether the effect of multiple categorization on humanization (secondary emotions) was explained by the sequential mediation of individuation and perceived threat as predicted (Hayes, Preacher, & Myers, 2011; see also Moscatelli, Albarello, Prati, & Rubini, 2014; Taylor, MacKinnon, & Tein, 2008). As in Study 1, Contrast 1 was used as an independent variable and Contrasts 2 and 3 as

covariates. As shown in Figure 2, Contrast 1 significantly predicted individuation,  $B_1 = .352, SE_1 = .074, p = .001$ . Individuation (negatively) predicted perceived threat, while controlling for Contrast 1,  $B_2 = -.180, SE_2 = .078, p = .022$ . In turn, perceived threat (negatively) predicted humanization, while controlling for Contrast 1 and individuation,  $B_3 = -.109, SE_3 = -.048, p = .024$ . Including the two mediators in the regression analysis, the relationship between Contrast 1 and humanization became non-significant (before inclusion of mediators,  $B_4 = .113, SE_4 = .033, p = .001$ ; after inclusion of mediators,  $B_4 = .061, SE_4 = .037, p = .104$ ). The point of estimate for the sequential indirect effect equated to 0.052,  $SE = .019$ , with 95% bias-corrected confidence interval of 0.0159 to 0.0951.<sup>8</sup>

Study 2 supported the results of Study 1 by demonstrating the ability of multiple categorization to promote the humanization of outgroup targets. Extending the mediational model of Study 1, we found that the reduction in dehumanization observed toward immigrants following multiple categorization was explained by individuation which in turn attenuated perceived threat.

### Study 3

In Study 3, we sought to replicate the sequential mediation model observed in Study 2. The same manipulations and outgroup target used in Study 2 were used; however, we introduced a new generative measure of humanization. Drawing from Prati, Crisp, and Rubini (2015), we tested whether multiple versus simple categorization would promote the spontaneous generation of human traits to describe the immigrant target. It was predicted that after perceiving immigrants on the basis of multiple (vs. simple) category dimensions, individuals would spontaneously use a higher number of uniquely human traits when describing them.

**Table 3.** Frequencies and Percentages of Words Used to Describe the Target (Study 3).

Human traits			Not uniquely human traits		
Words	Frequency	Percentage	Words	Frequency	Percentage
Sympathetic	38	39.6	Simple	26	27.1
Broad-minded	31	32.3	Unemotional	25	26.0
Insecure	17	17.7	Rude	23	24
Reserved	10	10.4	Cooperative	14	14.6
Humble	8	8.2	Easy-going	7	7.3

## Method

**Participants and design.** Ninety-six students ( $M_{age} = 21.16$ ,  $SD = 2.39$ ; 66% women) from Bologna University participated in the study on a voluntary basis. They were randomly assigned to a categorization condition (simple, multiple ingroup, multiple outgroup, multiple mixed) in a between-subjects design.

**Procedure and materials.** Before completing the experiment, participants were asked to indicate their affiliation to the social groups considered to ensure that only those who were Italians, young, students, living in the same town, and without children (controlling for gender) were included. The manipulation was identical to that of Study 2. Participants were provided with a description of immigrants under one of four conditions.

This time, to measure dehumanization, participants were specifically instructed to generate specific traits to describe these individuals that were then coded according to whether they represent human versus non-uniquely human traits. In this way, the thought-listing task used to reinforce the manipulation in Studies 1 and 2 provided the basis for the dependent measure in Study 3. Participants then completed scales measuring the individuation of immigrants' ( $\alpha = .81$ ) and perceived threat (symbolic  $\alpha = .79$ ; realistic  $\alpha = .82$ ) as in Study 2. Finally, they were asked to report the nationality of the immigrants they thought about.

## Results and Discussion

**Data preparation.** There was no effect of immigrants' most cited nationalities (Morocco, Romania, Tunisia, Ukraine) on individuation,  $F(5, 96) = 1.735$ ,  $p = .137$ ,  $\eta^2 = .086$ ; nor on generation of uniquely human traits,  $F(5, 94) = 0.624$ ,  $p = .688$ ,  $\eta^2 = .035$ ; or on perceived threat,  $F(5, 96) = 0.19$ ,  $p = .96$ ,  $\eta^2 = .01$ . We also found no significant effect of participants' gender on any of the dependent variables.

Paired sample  $t$  tests also showed no significant differences between participants' identification with the social categories included ( $M_{nationality} = 5.181$ ,  $SD = 1.69$ ;  $M_{gender} = 4.911$ ,  $SD = 1.78$ ;  $M_{age} = 5.112$ ,  $SD = 1.71$ ;  $M_{parenthood} = 4.945$ ,  $SD = 1.80$ ;  $M_{occupation} = 5.173$ ,  $SD = 1.69$ ;  $M_{residence} = 5.215$ ,  $SD = 1.64$ ), all  $ps > .081$ .

**Coding of human versus non-uniquely human traits.** Two coders blind to the hypotheses of the study coded the traits generated by participants in terms of whether they reflected uniquely human and human nature (e.g., "sympathetic," "insecure") and non-uniquely human and not human nature (e.g., "comfortable," "passive") traits (see Table 3). Coders were told that uniquely human traits are distinctive of human beings and not shared with other animals or objects (Haslam, 2006). In contrast, non-uniquely human traits are shared with other animals or objects. They were provided with several examples drawing from the literature on dehumanization. For each participant, coders recorded the number of uniquely human traits and non-uniquely human traits generated. The inter-coder agreement was acceptable for both uniquely human and non-uniquely human traits,  $r(25) = .68$ ,  $p < .05$ ;  $r(25) = .71$ ,  $p < .005$ . The proportions of the two categories of traits were arcsine transformed to normalize the distribution of the data and remove intercell dependency (for similar ways to treat proportions of categories, see Menegatti & Rubini, 2012; Moscatelli et al., 2014; Prati, Menegatti, & Rubini, 2015; see Table 4).

**Analytic strategy.** The same three contrasts used in Studies 1 and 2 were used.<sup>9</sup>

**Human traits.** A 4 (categorization type: simple, multiple ingroup, multiple outgroup, multiple mixed)  $\times$  2 (trait type: human, non-uniquely human) mixed model ANOVA with repeated measures on the second factor was conducted. Results revealed no effect of categorization type,  $F(3, 92) = 0.003$ ,  $p = .992$ ,  $\eta^2 = .000$ , but a main effect of trait type,  $F(1, 92) = 55.459$ ,  $p = .002$ ,  $\eta^2 = .376$ . Overall, participants generated a greater proportion of uniquely human ( $M = 1.710$ ,  $SD = 0.21$ ) than non-uniquely human traits ( $M = 1.431$ ,  $SD = 0.20$ ). This was qualified by a Categorization type  $\times$  Trait type interaction,  $F(3, 92) = 7.699$ ,  $p = .001$ ,  $\eta^2 = .201$ . For non-uniquely human traits, Contrast 1,  $t(92) = -4.803$ ,  $p = .001$ ,  $d = 1.109$ , was significant, showing that a lower proportion of non-human traits was generated by participants in multiple categorization conditions compared with the simple condition. Contrast 2,  $t(92) = -0.108$ ,  $p = .914$ ,  $d = -0.055$ , and Contrast 3,  $t(90) = 0.161$ ,  $p = .873$ ,  $d = -0.052$ , were not significant, showing no difference between multiple categorization conditions. For human traits, Contrast 1,

**Table 4.** Individuation, Perceived Threat, and Human Traits as a Function of Categorization Type (Study 3).

	Categorization type											
	Simple			Multiple ingroup			Multiple outgroup			Multiple mixed		
	%	M	SD	%	M	SD	%	M	SD	%	M	SD
Individuation		2.32	1.21		3.62	1.30		3.56	1.16		4.00	1.21
Perceived threat		4.48	0.96		3.70	1.03		3.73	1.28		3.42	0.87
Human traits	49.31	1.55	0.17	59.15	1.76	0.21	59.22	1.76	0.17	59.65	1.77	0.17
Non-uniquely human traits	50.68	1.58	0.17	40.84	1.38	0.21	40.77	1.38	0.17	40.34	1.37	0.17

$t(92) = 4.803, p = .001, d = -1.164$ , was significant, confirming that a greater proportion of human traits was generated by participants in multiple categorization conditions compared with the simple condition. Contrast 2,  $t(92) = 0.108, p = .914, d = 0.055$ , and Contrast 3,  $t(92) = -0.161, p = .873, d = 0.052$ , were not significant, showing no difference between multiple categorization conditions (see Table 4).

**Individuation.** A one-way ANOVA on the individuation measure showed a main effect of categorization type,  $F(3, 92) = 8.426, p = .007, \eta^2 = .21$ . Again, Contrast 1,  $t(90) = 3.501, p = .001, d = -0.725$ , was significant demonstrating that immigrants were perceived as individuals to a higher extent in all multiple categorization conditions compared with the simple categorization condition. Contrast 2,  $t(90) = 0.648, p = .519, d = -0.096$ , and Contrast 3,  $t(90) = -0.901, p = .370, d = -0.221$ , were not significant, showing no difference between the different multiple categorization conditions.

**Perceived threat.** A 4 (categorization type: simple, multiple ingroup, multiple outgroup, multiple mixed)  $\times$  2 (threat: realistic, symbolic) mixed model ANOVA on the perceived threat from immigrants was conducted. Results revealed a significant main effect of categorization type,  $F(3, 92) = 4.387, p = .006, \eta^2 = .125$ . There was no significant effect of threat,  $F(1, 92) = 0.610, p = .550, \eta^2 = .00$ , and so perceived symbolic and realistic threats from immigrants were collapsed in one index for the contrast analyses. Contrast 1  $t(90) = -4.997, p = .001, d = 1.296$ , was significant, confirming that threat was reduced in all multiple categorization conditions compared with the simple categorization condition. Contrast 2,  $t(90) = -0.829, p = .409, d = 0.015$ , and Contrast 3,  $t(90) = 1.086, p = .280, d = 0.121$ , were not significant, confirming that there was no difference between multiple categorization conditions in threat.

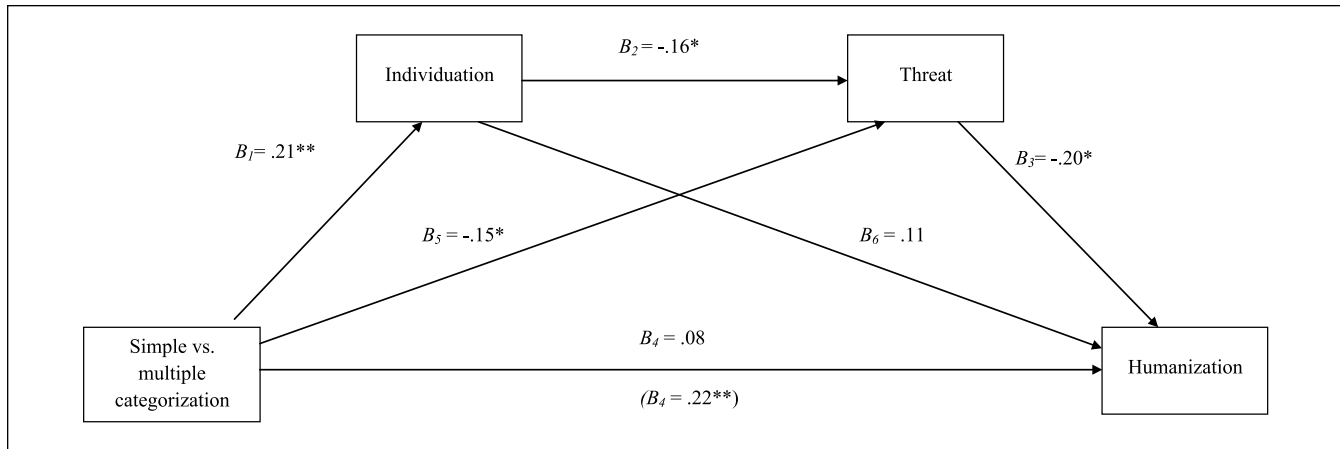
**Mediational analysis.** In line with Study 2, we then tested the sequential mediating role of individuation and threat of the humanizing effect of multiple categorization of dehumanization (see Figure 3). As in previous studies, Contrast 1 was used as an independent variable and Contrasts 2 and 3

as covariates. Contrast 1 predicted individuation,  $B_1 = .212, SE_1 = .060, p = .001$ . Individuation (negatively) predicted threat, while controlling for Contrast 1,  $B_2 = -.163, SE_2 = .088, p = .050$ . Threat, in turn, predicted the generation of uniquely human traits to describe immigrants, while controlling for Contrast 1 and individuation,  $B_3 = -.201, SE_3 = .084, p = .018$ . Analysis confirmed the presence of a significant sequential indirect effect with a point of estimate equated to 0.11 ( $SE = .009$ ), with a 95% bias-corrected confidence interval of 0.005 to 0.0437. Including the two mediators in the regression analysis, the relationship between Contrast 1 and humanization became non-significant (before inclusion of mediators,  $B_4 = .227, SE_4 = .050, p = .001$ ; after inclusion of mediators,  $B_4 = .085, SE_4 = .056, p = .129$ ).<sup>10</sup>

The results of Study 3 provide support for those reported in Studies 1 and 2. By using a different, generative measure of humanization, we are able to provide convergent support for the conclusion that multiple categorization interventions can successfully reduce the dehumanization of outgroup members. Rather than rating outgroup members against a number of pre-defined primary and secondary emotions, participants freely generated traits to describe them in Study 3. Results demonstrate that participants who had assigned to multiple categorization conditions subsequently generated a greater number of uniquely human traits to describe the target than those in the simple categorization condition. Again this effect was not limited to a specific combination of categorization dimensions, supporting the robustness of the multiple categorization effect. We replicated the sequential mediation model. The results demonstrate that multiple categorization successfully triggers a change in cognitive processing that impedes category-based responding, reducing perceptions of outgroup threat and the dehumanized perceptions of the outgroup in turn.

## General Discussion

The contribution of these studies to the understanding of conditions under which humanization of outgroups can take place is threefold. First, we show that perceiving others along multiple criteria, including only shared or only unshared categorical dimensions between participants and targets,



**Figure 3.** Multiple mediation test of the relationship between simple versus multiple categorization and humanization through individuation and threat (Study 3).

\* $p < .01$ . \*\* $p < .05$ .

increased the perception of outgroup target's humanness. Second, we show, for the first time, the intertwined mediational effects of cognitive and affective factors in explaining the beneficial effects of multiple categorization in humanizing outgroup members. Third, we provide support for the generalizability of the multiple categorization approach by showing its effectiveness across two real target outgroups, and three different measures of humanization including free generation of descriptors of the outgroup target.

Our results suggest that the abandonment of dichotomous categorization is crucial for promoting humanization of outgroups. Study 1 shows that multiple categorization leads to humanization of outgroup members by attributing them uniquely human traits to a higher extent than under simple categorization conditions. Study 2 confirms this effect by showing that under multiple categorization conditions, immigrants are attributed secondary emotions to a higher extent than simple categorization. Study 3 goes on to show that human traits were spontaneously generated and attributed to immigrants much more under multiple categorization contexts than under simple categorization. This forms a very noteworthy finding since a free response format was used to test the generative humanizing role of multiple categorization. Results complement recent evidence obtained by Prati, Crisp, and Rubini (2015) who showed similar findings with a counter-stereotypic approach to generation of secondary emotions related to outgroup members. In this vein, these social interventions demonstrate their impact in hindering dehumanization, even at the level of encoding processes.

The present results demonstrate that independently of a specific combination of categories, multiple categorization leads to convergent humanizing outcomes. Even when targets are defined entirely by multiple outgroup categories, they are more positively evaluated than targets defined by a single outgroup identity. Overall, there are no differences

between the three types of multiple categorization indicating that it is increasing the *number* of categories considered, regardless of whether these are ingroup or outgroup in nature that reduces intergroup bias (see also Prati, Moscatelli, Pratto, & Rubini, 2016).

This research also investigated, for the first time, the processes that can explain the effect of multiple categorization effects on reduced dehumanization of outgroups. Study 1 provided evidence that increased individuation of the outgroup explained the humanizing effect of multiple categorization independently by the nature of the categories considered. Although mere categorization of individuals into groups provides the basis for intergroup differentiation (Tajfel & Turner, 1979), this is reduced by increasing the number and/or complexity of category combinations that simultaneously define an outgroup target through encouraging a shift to a more individuated mode of social perception (Crisp, Hewstone, & Rubin, 2001). In Studies 2 and 3, we found evidence for a sequential mediational model in which multiple categorization increased individuation of outgroup members, thereby inhibiting threat responses and reducing intergroup dehumanization accordingly. This sequential mediational model sheds light on the interrelation between core multiple mechanisms of intergroup tolerance.

It has previously been suggested that building a sense of super-ordinate identification between groups may help overcome dehumanization (Capozza et al., 2013). Commentators have however, expressed some caution about making a common human identity salience that they suggest may normalize aggression and excuse the harmful behavior as "only human" (Haslam & Loughnan, 2014). Here, we do not find any evidence that the effect of multiple categorization on dehumanization is explained by a tendency to think of target groups in terms of a more inclusive overall category, but rather a process of decategorization. These findings add

weight to the idea that multiple categorization leads to less category-based responding rather than more inclusive use of categorization (Crisp, Hewstone, & Rubin, 2001). Based on the evidence from our studies, we suggest that multicultural policy should aim to promote the perception of multiple categorizations, thus shifting people out of simplistic “us” versus “them” ways of thinking, and promoting more positive relations between different communities and groups (see also Crisp & Meleady, 2012).

Of course this research has some limitations. It is possible that the increased humanization of outgroup members under multiple categorization, which was systematically obtained across all studies independently of the type of multiple categorization used, cannot be generalized to the outgroups as a whole (i.e., all Padova students; all immigrants), but only to outgroup members portrayed by multiple affiliations. We acknowledge this is a potential limitation of the work. At the same time, we strongly believe in the power of multiple categorization strategy as an intervention that can lead to blur intergroup boundaries and to acknowledge the humanity of each person. Moreover, given its role in leading to cognitive flexibility and challenging the way we think about others (Crisp & Turner, 2011), it is plausible that after being exposed to multiple categorization interventions, people consider more human even other outgroups that are not directly portrayed along a variety of categorical dimension. Future research could directly test the generalizability of humanization to outgroup targets as a whole.

It could also be observed that perceived threat from immigrants was not particularly high even in the simple categorization condition. We also acknowledge this is a potential limitation of the work, which makes the generalizability of the effectiveness of the technique to contexts of more severe conflict uncertain. However, we do note that in the simple categorization condition, perceived threat was significantly different from the middle point of the scale (Study 2,  $M = 4.521$ ,  $SD = 1.09$ ,  $t = 2.678$ ,  $p = .012$ ; Study 3,  $M = 4.480$ ,  $SD = 0.96$ ,  $t = 2.493$ ,  $p = .02$ ). This evidence suggests that our findings have relevance for many cases in which outgroup threat is experienced.

## Conclusion

The present studies demonstrate that multiple categorization represents a social-cognitive intervention that successfully enhances intergroup humanization. It works by increasing individuation of the outgroup, and reducing perceived threat. These effects are apparent both when participants attribute pre-defined uniquely human traits to the outgroup and when they freely generate characteristics. It is also not limited to specific combinations of multiple categories. These findings therefore support the proposition that promoting a focus on multiple categorizations could be an effective new means of encouraging tolerance in modern multicultural societies.

## Declaration of Conflicting Interests

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## Notes

1. We selected the most frequent groups on the basis of the highest frequencies of citation. These were: age group (cited by 17, representing the 85% of the sample), music preference group (17, 85%), food preference group (16, 80%), favorite football team group (17, 85%), and sport group (15, 75%).
2. Across the three studies, we tested whether the simple condition was significantly different from each multiple condition separately. Contrast 1 (1, -1, 0, 0) tested whether in multiple ingroup categorization, the Padova students attributed uniquely human traits to a higher extent compared with simple categorization. Contrast 2 (1, 0, -1, 0) tested whether in multiple outgroup categorization, the Padova students attributed uniquely human traits to a higher extent compared with simple categorization. Contrast 3 (1, 0, 0, -1) tested whether in multiple mixed categorization, the Padova students attributed uniquely human traits to a higher extent compared to simple categorization. Results in Study 1 showed that Contrasts 1,  $t(91) = -4.03$ ,  $p = .001$ ,  $d = 1.18$ ; Contrast 2,  $t(91) = -4.25$ ,  $p = .001$ ,  $d = 1.35$ ; and Contrast 3,  $t(91) = -3.44$ ,  $p = .001$ ,  $d = 1.12$ , were significant for the attribution of uniquely human traits. Contrasts 1,  $t(91) = -2.34$ ,  $p = .02$ ,  $d = 2.38$ ; Contrast 2,  $t(91) = -2.06$ ,  $p = .04$ ,  $d = 2.18$ ; and Contrast 3,  $t(91) = -2.91$ ,  $p = .005$ ,  $d = 2.89$ , were significant for individuation. For super-ordinate categorization, contrasts were non-significant,  $ps > .87$ .
3. A 4 (categorization type: simple, multiple ingroup, multiple outgroup, multiple mixed)  $\times$  2 (human traits: uniquely, non-uniquely human)  $\times$  2 (trait valence: positive, negative) analysis of variance (ANOVA) with repeated measures on the last two factors showed significant effects of human traits,  $F(1, 91) = 4.39$ ,  $p = .04$ ,  $\eta^2 = .05$ , and trait valence,  $F(1, 91) = 8.66$ ,  $p = .004$ ,  $\eta^2 = .08$ . Overall, participants attributed non-uniquely human traits ( $M = 4.05$ ,  $SD = 0.05$ ) to a higher extent compared with uniquely human traits ( $M = 3.71$ ,  $SD = 0.07$ ) and negative emotions ( $M = 3.94$ ,  $SD = 0.06$ ) to a higher extent than positive emotions ( $M = 3.82$ ,  $SD = 0.04$ ). These effects were qualified by Categorization type  $\times$  Human traits interaction,  $F(3, 91) = 16.85$ ,  $p = .001$ ,  $\eta^2 = .26$ , and Trait valence  $\times$  Human traits interaction,  $F(3, 91) = 7.24$ ,  $p = .05$ ,  $\eta^2 = .07$ .
4. The additional social categories to define multiple categorizations were age, gender, occupation, parenthood, and residence. These categories were drawn from pilot studies reported by Prati, Crisp, Pratto, and Rubini (2016). Participants of these studies, that is, Bologna University students, rated as equally meaningful the aforementioned categories.
5. We also included a dependent measure that reveals nothing of relevance for the current report so we do not discuss it further.
6. As for Study 1, three contrasts were reported to test whether the simple condition was significantly different respectively

- from multiple ingroup, multiple outgroup, and multiple mixed conditions. For secondary emotions, Contrast 1,  $t(108) = -2.40$ ,  $p = .018$ ,  $d = -.74$ ; Contrast 2,  $t(108) = -2.60$ ,  $p = .010$ ,  $d = -.78$ ; and Contrast 3,  $t(108) = -3.24$ ,  $p = .002$ ,  $d = -1.02$ , were significant. For perceived threat, Contrast 1,  $t(108) = 3.22$ ,  $p = .002$ ,  $d = 0.80$ ; Contrast 2,  $t(108) = 3.31$ ,  $p = .001$ ,  $d = 0.87$ ; and Contrast 3,  $t(108) = 4.98$ ,  $p = .001$ ,  $d = 1.40$ , were significant. For individuation, Contrast 1,  $t(108) = -3.48$ ,  $p = .001$ ,  $d = -.84$ ; Contrast 2,  $t(108) = -4.12$ ,  $p = .001$ ,  $d = -1.01$ ; and Contrast 3,  $t(108) = -3.93$ ,  $p = .001$ ,  $d = -.94$ , were significant.
7. A 4 (categorization type: simple, multiple ingroup, multiple outgroup, multiple mixed)  $\times$  2 (emotions: primary, secondary)  $\times$  2 (emotions valence: positive, negative) ANOVA on the attribution of emotions to immigrants was conducted. There was a significant effect of emotions,  $F(1, 108) = 28.16$ ,  $p = .001$ ,  $\eta^2 = .20$ ; overall, primary emotions scores were ( $M = 4.32$ ,  $SD = 0.07$ ) lower than secondary emotions scores ( $M = 5.12$ ,  $SD = 0.13$ ). This effect was qualified by Emotions  $\times$  Categorization type interaction,  $F(3, 108) = 6.76$ ,  $p = .001$ ,  $\eta^2 = .16$ . Moreover, a significant effect of emotions valence,  $F(1, 108) = 6.95$ ,  $p = .01$ ,  $\eta^2 = .06$ , showed that positive emotions ( $M = 4.89$ ,  $SD = 0.08$ ) were attributed to the outgroup to a higher extent compared with negative emotions ( $M = 4.65$ ,  $SD = 0.08$ ), whereas there was no effect of categorization type,  $F(3, 108) = 1.91$ ,  $p = .13$ ,  $\eta^2 = .05$ .
  8. Although alternative models seemed less theoretically plausible, we reversed the sequence of the mediators (putting threat before individuation) of the effect of multiple versus single categorization (Contrast 1) on humanization. No significant indirect effect was found, 95% BC confidence intervals, CIs [-0.0012, 0.0179]. We also tested whether individuation and humanization sequentially mediated the effect of simple versus multiple categorizations on threat and we found no significant indirect effect,  $B = .010$ ,  $SE = .008$  95% BC CIs [-0.0373, 0.0003]. Finally, the sequential mediating role of threat and humanization on individuation showed no significant indirect effect,  $B = .009$ ,  $SE = .010$ , 95% BC CIs [-0.0032, 0.0435]. Thus, additional analyses support that the mediator variables work in sequence, in the order predicted.
  9. Three contrasts were performed to test whether the simple condition was significantly different respectively from multiple ingroup, multiple outgroup, and multiple mixed conditions. For the proportions of generated human traits, Contrast 1,  $t(90) = -2.80$ ,  $p = .006$ ,  $d = 0.84$ ; Contrast 2,  $t(90) = -2.74$ ,  $p = .008$ ,  $d = 0.92$ ; and Contrast 3,  $t(90) = -2.69$ ,  $p = .009$ ,  $d = 0.85$ , were significant. Contrast 1,  $t(90) = -2.66$ ,  $p = .009$ ,  $d = 0.57$ ; Contrast 2,  $t(90) = -2.44$ ,  $p = .017$ ,  $d = 0.65$ ; and Contrast 3,  $t(90) = -3.38$ ,  $p = .001$ ,  $d = 1.14$ , were significant for individuation. Contrast 1,  $t(90) = 3.86$ ,  $p = .001$ ,  $d = -1.07$ ; Contrast 2,  $t(90) = 3.52$ ,  $p = .005$ ,  $d = -1.05$ ; and Contrast 3,  $t(90) = -4.68$ ,  $p = .001$ ,  $d = -1.42$ , were significant for perceived threat.
  10. Alternative sequential mediation models were tested. When threat was placed prior to individuation within the sequential mediation model, the indirect effect became non-significant,  $B = .055$ ,  $SE = .005$ , 95% BC CIs [-0.0002, 0.0254], point of estimate. The sequential mediating role of individuation and humanization on threat showed no significant indirect effect,  $B = -.030$ ,  $SE = .024$ , 95% BC CIs [-0.0979, 0.0032]. Finally, the sequential mediating role of threat and humanization on individuation showed no significant indirect effect,  $B = .042$ ,  $SE = .034$ , 95%

BC CIs [-0.0099, 0.1257]. Thus, additional analyses supported the proposed order of the mediators.

### Supplemental Material

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

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