



Stereotypes and Dehumanization

The Relationship Between the Dual Models of Dehumanization and Stereotype Content

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Abstract: Across two studies, we tested the relationship between the stereotype dimensions of sociability, morality, and competence and the two dimensions of humanness (human nature and human uniqueness). Study 1 considered real groups and revealed that sociability had greater power than morality in predicting human nature. For some groups, sociability also trumped competence in predicting human nature. By contrast, the attribution of human uniqueness was predicted by competence and morality. In Study 2, participants read a scenario depicting an unfamiliar group in stereotypical terms. Results showed that competence and sociability were the strongest predictors of human uniqueness and human nature, respectively. Although with nuances, both studies revealed that sociability, morality, and competence relate differently to the two dimensions of humanness.

Keywords: morality, sociability, competence, human nature, human uniqueness

In recent decades, dimensional approaches have become very influential in understanding human social cognition (for a review, see Abele et al., 2021). For instance, research on person and group perception has developed two distinct – albeit related – models that guide social inferences: the stereotype content model (SCM; Cuddy et al., 2008; Fiske et al., 2002) and the dual model of dehumanization (DMD; Haslam, 2006; Haslam & Loughnan, 2014). According to SCM, person and group perception are driven by two functional dimensions: warmth and competence. Warmth (i.e., friendliness, kindness, and honesty) captures human benevolence and functions in defining others' intentions. Competence (i.e., intelligence, skillfulness, and ability) captures task achievement and functions in determining others' ability to achieve their goals (Fiske et al., 2007).

The DMD instead indicates that the attribution of humanness to social targets relates to two dimensions: while the characteristics of human nature (HN) are shared with other animals and facilitate social life, the characteristics of human uniqueness (HU) are exclusively human and facilitate efficiency in tasks involving complex reasoning (see Table 1). These two senses of humanness are linked to two kinds of dehumanization. Individuals or groups considered not to possess human nature qualities are perceived as lacking emotions and are seen as automata, cold, and rigid. Individuals or groups considered not to have uniquely human qualities are perceived as lacking refinement,

reason, and intelligence and are seen as vulgar and amoral (Haslam et al., 2008).

One hardly needs a microscope to note the similarities between the two models: both models comprise a dimension that captures the capacity to meet highly demanding cognitive goals: competence in the SCM and human uniqueness in the DMD. In a similar vein, both models comprise a dimension that covers human emotionality: warmth in the SCM and human nature in the DMD. Despite the apparent overlap between the two models, few studies have tested how human nature and human uniqueness relate to the basic dimensions of warmth and competence. Early work on the SCM suggests that only groups perceived as lacking both competence and warmth are dehumanized (Harris & Fiske, 2006). Indeed, comparing groups from the four quadrants of the SCM, only those lacking warmth and competence (e.g., drug addicts and homeless people) induced brain reactions comparable to those induced by non-human entities. This neural evidence has been interpreted in terms of extreme dehumanization. However, this approach suggests that only groups lacking both warmth and competence are dehumanized and do not test which human qualities (HN and/or HU) are denied to those groups.

Distinguishing between HN and HU, other works suggest that competence and human uniqueness are inherently linked (Jones-Lumby & Haslam, 2005; Haslam et al.,

Table 1. Traits associated with both conceptions of humanness

	Human nature (HN)	Human uniqueness (HU)
Traits	Curious, Friendly, Fun-loving, Active, Passionate, Ambitious, Emotional, Energetic, Imaginative, Impatient, Passive, Distracted, Impulsive, Excitable	Tolerant, Broadminded, Mature, Conscientious, Humble, Idealistic, Talkative, Conventional, Artistic, Absentminded, Ignorant, Frivolous, Reserved, Learned

2008; Loughnan & Haslam, 2007; Paladino & Vaes, 2009). For example, Jones-Lumby and Haslam (2005) asked participants to attribute a list of traits to various outgroups and rate their valence on the two stereotypical dimensions of warmth and competence and the two dimensions of humanness. The multidimensional scaling analysis revealed a moderate overlap between the scores related to HU and those related to competence. In a similar vein, contents referring to efficient executions (i.e., HU) make social groups more competent than warm (Martínez et al., 2017a; see also Loughnan & Haslam, 2007). Paladino and Vaes (2009) obtained similar results by asking participants to indicate how a list of stereotypical and counter-stereotypical traits would apply to target groups representing the SCM quadrants and the extent to which each trait represented an HN or HU characteristic. They found solid proximity between the competence dimension and traits of human uniqueness. Moreover, they observed that the high-competence and low-warmth outgroups were more humanized than other outgroups, thus suggesting that HU traits are seen as exclusively human. The relationship between warmth and the ascription of humanness is less conclusive. Indeed, in the multidimensional study by Jones-Lumby and Haslam (2005), HN did not overlap with warmth; instead, HN was equidistant between warmth and competence. Thus, the parallel remains unclear between the two dimensions of humanity and the two basic dimensions of social cognition and whether the SCM and DMD could be considered interchangeable when investigating dehumanization.

One source of confusion might be due to an important conceptual ambiguity of warmth. Indeed, warmth conflates aspects of sociability such as friendliness with aspects of morality such as honesty (for a discussion, Brambilla & Leach, 2014; Brambilla et al., 2021). Sociability refers to the ability to build effective relationships, while morality refers to building honest and fair relationships (Sacchi et al., 2014). In light of this distinction, early work by Leach et al. (2007) shows that people consider morality to be the most important quality for feeling good about one's ingroup. That perceived ingroup morality is a stronger predictor than sociability of pride in the group. In a similar vein, more recent work has shown that morality and sociability make unique contributions to social judgment. Morality plays a primary role in predicting emotional and behavioral reactions toward social targets (see the Moral

Primacy Model [MPM] of impression development; Brambilla et al., 2021). Thus, morality determines the positivity of interpersonal (Brambilla et al., 2019; Goodwin et al., 2014) and group impressions (Brambilla et al., 2012). Indeed, moral traits are perceived as unconditionally positive in other people, and moral but unsociable targets are perceived more positively than immoral but sociable ones (Goodwin et al., 2014; Landy et al., 2016). It has also been shown that moral qualities are more functional to establishing whether other individuals and groups are beneficial or harmful for the self (Brambilla et al., 2018) and therefore predict our impressions more strongly (Brambilla et al., 2021; Goodwin, 2015).

The conceptual distinction between sociability and morality is relevant not only for impression formation but also for the ascription of humanness. Indeed, the DMD implicitly distinguishes between sociability and morality, as moral characteristics are conceived as uniquely human, while sociability characteristics tend to be described as shared with other animals (i.e., HN). As a case in point, Haslam (2006) argued that the skills necessary to demonstrate competence (rationality and maturity) and to be moral (moral sensibility) are both high-order cognitions exclusive to human beings. In line with this reasoning, it has been shown that morality and humanness are tightly bound (Bastian et al., 2011; Brandt & Reyna, 2011; Riva et al., 2016). For instance, people ascribe a lower capacity for experiencing pain following socially stressful events to those who lack moral qualities as they are denied full humanity (Riva et al., 2016; see also Brambilla & Riva, 2017). At the group level, outgroup members who violate moral values are often dehumanized, and this effect extends to ingroup members when they behave immorally (Brandt & Reyna, 2011). Similarly, social categories rated as high in HN and HU are perceived as morally worthy and moral agents responsible for their actions, respectively (Bastian et al., 2011). Taken together, all these findings suggest that morality and the ascription of humanity are linked.

The Present Research

In this present work, we aim at investigating the relationship between the dimensions of sociability, morality, and competence and the dual model of dehumanization. In

doing so, we extend previous research by connecting research on the basic dimensions of social perception with those on dehumanization. Indeed, although prior research has attempted to test the overlap between the two approaches (Jones-Lumby & Haslam, 2005; Harris & Fiske, 2006; Haslam et al., 2008; Loughnan & Haslam, 2007; Paladino & Vaes, 2009), it has failed to consider morality to be an important dimension in shaping social impressions. Thus, it is entirely unknown whether the well-established relationship between competence and human uniqueness may be influenced when moral qualities are taken into account. In other words, it is unknown whether competence and morality are considered to be equally related to human uniqueness. In a similar vein, no prior research has shown whether the weak and inconclusive relationship between warmth and human nature revealed by prior insights may be due to the conflation between sociability and morality. Thus, we aim to find common ground in competing theories to improve understanding of how group stereotypes predict the differential treatment of social groups.

In line with prior evidence (Haslam, 2006; Paladino & Vaes, 2009), we expect that human uniqueness will be more related to competence than other dimensions (Hypothesis 1, H1). Considering that prior work has shown that human nature is mainly related to human emotionality and interpersonal openness, we expect that HN will be more related to sociability than to morality (Hypothesis 2, H2). In other words, we anticipate the importance of distinguishing between sociability and morality, as morality should be less relevant in defining HN characteristics. In a similar vein, we expect that sociability should also trump competence in predicting the ascription of HN (Hypothesis 3, H3). To test these predictions, we ran two studies. Study 1 was designed as a first test of the strength and functionality of our hypotheses in natural settings. For this, we asked participants to evaluate several national outgroups on morality, sociability, competence, human nature, and human uniqueness. In Study 2, we experimentally manipulated the traits ascribed to a fictitious immigrant group. Materials and data for these studies are available at <https://osf.io/2evcw/>.

Preliminary Study: Selecting Human Nature and Human Uniqueness Traits

In the main studies, we asked participants to rate social groups on HN and HU. Thus, we conducted a preliminary study to select the traits that best represent, in the Spanish language, the two dimensions of humanness in the DMD.

Method

Participants

A total of 207 Spanish students ($M = 20.59$, $SD = 4.16$; 154 female) volunteered to participate in the study.

Materials and Procedure

Each participant assessed traits along three dimensions: Human Nature (HN), Human Uniqueness (HU), and valence. The traits represented a wide range of personality descriptors selected from the list that Haslam et al. (2004) created. As their sources, these authors used the Big Five terms developed by John and Srivastava (1999), the terms of Schwartz's taxonomy of value (1992), and evaluative terms used by Benet-Martínez and Waller (2002). We further included several terms used by Martínez et al. (2017b). Thus, we considered 144 traits. To prevent fatigue, we created four versions of the questionnaire – each containing 36 traits – and asked participants to rate the traits on:

- (1) Valence: “Your task is to score these traits as positive or negative. Please rate each trait on a scale of 1 (= *very negative*) to 7 (= *very positive*).”
- (2) Human nature: “Your task is to indicate the extent to which humans possess the following traits. For this, rate each trait on a scale of 1 (= *they do not possess it at all*) to 7 (= *they definitely possess it*).”
- (3) Human uniqueness: “Your task now is to indicate whether these traits are uniquely human – in other words, whether they apply to other animal species. For this, rate each trait on a scale of 1 (= *not uniquely human*) to 7 (= *uniquely human*).”

Results and Discussion

To determine the reliability of the participants' assessments of the traits in all three dimensions, we followed the procedure established by Rothbart and Park (1986). Specifically, we transposed the database and computed the mean for each of the three dimensions in the 36 traits for each version of the questionnaire. Next, we calculated the bivariate correlation between these means and the scores given by each participant to each of the traits in the three dimensions to which they had responded. All the correlations were significant ($p < .01$) in all the participants except for four, so we excluded these from the final sample.

Next, we calculated reliability using Cronbach's α and the intraclass correlation coefficient. Although this procedure usually analyses the degree of intercorrelation between items, in this case, with the transposed matrix, the analysis provided the degree of agreement between the raters (α between .97 and .98). Once we confirmed

the reliability of the judgments provided by the participants in each version of the questionnaire, the average scores of the 144 traits in the three dimensions were calculated and transferred to a new matrix. According to expectations, the two dimensions of humanness, HN and HU, showed a null association, $r(144) = .08$; $p = .364$, demonstrating the distinctiveness of the two dimensions. Valence correlated significantly with HN, $r(144) = .40$; $p < .001$ but not with HU, $r(144) = -.01$; $p = .955$. Moreover, the correlation between valence and HN was significantly higher than between valence and HU, $z = 3.726$; $p < .0001$.

Taken together, the findings show that Spanish participants can differentiate between the human terms that we share with animals (HN) and those that are uniquely human (HU). Furthermore, participants considered these dimensions to be independent of each other so that high scores in HN are not simultaneously high in HU. Moreover, results show a strong tendency to value HN traits more positively than HU traits. In other words, people tend to attribute more positive valence to standard human traits than those that are learned and result from cultural exchange and social progress. Based on these results, we selected 18 traits: nine HN traits and nine HU traits. In addition, we selected nine traits as fillers. The selected traits did not semantically overlap with the features used to capture sociability, competence, and morality. Thus, the selected HN traits were as follows: curious, comfortable, active, fun, vital, innocent, peaceful, helpful, and passionate. The HU traits were as follows: imaginative, humble, meticulous, cultured, tolerant, altruistic, artistic, entrepreneurial, and civic. The HU traits were rated higher in the HU dimension ($M = 5.60$, $SD = 0.66$) than in the HN dimension ($M = 4.08$, $SD = 0.27$), $t = 7.36$; $p < .001$, $d = 2.45$, 95% CI [1.09, 3.79]. Importantly, the scores of the HU traits on the HN dimension did not differ from the mid-point of the scale ($t < 1$, $p = .370$), suggesting that the traits were mainly perceived as related to HU. In a similar vein, HN traits were rated higher in the HN dimension ($M = 4.80$, $SD = 0.64$) than in the HU dimension ($M = 3.27$, $SD = 0.82$), $t = 4.44$; $p = .002$, $d = 1.48$, 95% CI [0.49, 2.43]. However, the scores of the HN traits on the HU dimension were significantly lower than the mid-point of the scale ($t = 2.68$; $p = .03$), suggesting that the selected traits tended to be perceived as high in HN but also low in HU. Post hoc analyses revealed that the trait *active* had the lowest rating on HU and that after we removed that trait from the analyses, the HU scores did not differ from the mid-point of the scale. We ran the analyses of the main studies by considering the 18 selected traits. Indeed, removing the trait “active” from the main studies did not change the pattern of results reported below. Finally, traits did not differ in valence, $t(16) = 1.42$; $p = .176$, $d = 0.34$, 95% CI [-0.15, 0.83].

Study 1

In Study 1, we aimed to test the relationship between the stereotype content dimensions of morality, sociability, and competence and the two dimensions of humanness. To do so, we asked participants to rate real groups on traits reflecting the above constructs.

Method

Participants

We recruited participants from an introductory psychology course at a large Spanish university. All those who agreed to participate were involved in the study ($N = 108$; $M_{\text{age}} = 19.26$, $SD_{\text{age}} = 3.95$, 87 female) and obtained partial course credit.

Procedure

To select the national outgroups, we conducted a pilot study. Fifty-seven Spanish university students participated in the study (age range from 20 to 31 years, $M = 21.32$, $SD = 1.58$; 50 women). We asked participants to rate 14 relevant national outgroups in the Spanish community: Germans, Greeks, Russians, Argentines, Americans, Moroccans, Swedish, Italians, Japanese, Peruvians, Senegalese, British, Chinese, and Cubans. Each participant rated the groups on competence (i.e., competent, intelligent, and skillful), sociability (i.e., friendly, warm, and likable), and morality (i.e., honest, sincere, and trustworthy). Cronbach's α for the three stereotypical dimensions showed an acceptably good internal consistency (α between .81 and .92 for competence, α between .79 and .92 for sociability, and α between .78 and .92 for morality). We selected five groups differently rated on the key dimensions. Specifically, the groups were Germans, Russians, Italians, Moroccans, and Peruvians.

We asked participants involved in the main study to rate the five national outgroups on the traits, tapping the sociability, morality, and competence dimensions employed in the pilot study. Participants provided their responses on 5-point Likert scales ranging from 1 (= *a little*) to 5 (= *a lot*). Next, we presented a list of humanness traits and asked participants to indicate the extent to which each of the traits could be applied to the target group using 7-point Likert scales ranging from 1 (= *not applicable at all*) to 7 (= *fully applicable*). Finally, to control whether the hypothesized effects were independent of the general likeability of the group, we included a question about the general attitude toward the group (“What is your overall impression of this group?”) on a scale of 0 (= *completely negative*) to 10 (= *completely positive*).

Table 2. Mean of the five groups in global attitude, stereotypical dimensions, and humanness

	Attitude	Competence	Sociability	Morality	Humanness HN	Humanness HU
Germans	6.72 ^b	4.05 ^a	2.57 ^c	3.32 ^{ab}	4.31 ^a	4.67 ^{ab}
Russians	5.90 ^c	3.92 ^b	2.29 ^d	2.98 ^c	4.05 ^b	4.28 ^c
Italians	7.30 ^a	3.71 ^c	4.09 ^a	3.16 ^b	5.02 ^c	4.83 ^a
Moroccans	6.17 ^c	3.59 ^c	3.21 ^b	2.91 ^{cd}	4.31 ^a	4.25 ^c
Peruvians	6.56 ^b	3.30 ^d	3.98 ^a	3.34 ^a	4.87 ^d	4.46 ^b

Note. Column means with different superscripts differ at $p < .05$. HN = human nature; HU = human uniqueness.

Table 3. Multiple regression analyses of humanness (HN) as a function of morality, sociability, competence, and likeability

Predictor	Germans		Russians		Italians		Moroccans		Peruvians	
	β	t	β	t	β	t	β	t	β	t
Morality	.207	2.24*	.197	2.12*	.137	1.60 ^{ns}	.183	1.89 ^{ns}	.115	0.90 ^{ns}
Sociability	.398	5.30**	.435	5.61**	.365	4.84**	.335	4.19**	.376	4.32**
Competence	.311	4.11**	.168	2.33*	.291	3.70**	.160	1.98 ^{ns}	.287	2.91**
Likeability	.158	1.83 ^{ns}	.237	2.95**	.195	2.43*	.257	2.98**	.089	0.86 ^{ns}

Note. ns = Not significant. * $p < .05$; ** $p < .01$.

Results and Discussion

Preliminary Analyses

We first analyzed how the groups were rated on morality, sociability, and competence (see Electronic Supplementary Materials 1, ESM 1, for the correlations between the variables and the variance inflation factors of the five outgroups). The 5 (Group: Germans vs. Russians vs. Italians vs. Moroccans vs. Peruvians) \times 3 (Stereotypical dimensions: Competence vs. Sociability vs. Morality) analysis of variance (ANOVA) showed that the groups were perceived differently on the three stereotypical dimensions, $F(8, 856) = 94.62, p < .001, \eta^2_p = .47$ (see Table 2). Thus, Germans were perceived as highly competent but lacking sociability. Italians and Peruvians were perceived as highly sociable, while Moroccans and Russians were rated as lacking morality.

A similar analysis of the HN and HU scores revealed that the groups were perceived differently on the two humanness dimensions, $F(4, 428) = 31.90, p < .001, \eta^2_p = .23$ (see Table 2). Italians and Peruvians were perceived as high in HN, while Russian received the lowest scores on HN. Italians and Germans were rated as possessing high HU, while Moroccans and Russians received the lowest scores. Groups also elicited different global impressions, $F(4, 428) = 20.21, p < .001, \eta^2_p = .16$, indicating that Italians, Germans, and Peruvians elicited the most positive impressions (see Table 2).

Stereotypical Dimensions and Human Nature (HN)

To establish the predictive power of the stereotypical dimensions on human nature (HN), we carried out five separate linear regressions for each national outgroup. Sociability, competence, and morality were included as the

predictors in the model. As seen in Table 3, sociability predicted HN for all national outgroups. By contrast, for three out of five groups (Italians, Moroccans, and Peruvians), morality did not have a significant linear relationship in the regression equation. Moreover, for Italians and Peruvians, sociability had a stronger power than morality in predicting HN scores ($z = 1.77, p = .038$ for Italians and $z = 2.03, p = .021$ for Peruvians). For Moroccans, sociability was as important as morality, $z = 1.18, p = .118$. For Russians ($z = 1.93, p = .027$) and Germans ($z = 1.53, p = .063$), sociability had a stronger power than morality in predicting HN scores. Consequently, for each target group, the more sociable the group was stereotyped, the more human nature was ascribed. Further analyses revealed that sociability was a better predictor than competence for Russians ($z = 2.15, p = .016$). However, we did not find any difference between sociability and competence for Germans ($z = .72, p = .235$), Italians ($z = .60, p = .274$), Peruvians ($z = .73, p = .234$), and Moroccans ($z = 1.36, p = .088$). Moreover, competence and morality did not differ in predicting HN scores (all $ps > .10$).

Stereotypical Dimensions and Human Uniqueness

The five regression analyses for each national outgroup on HU (see Table 4) – using sociability, competence, and morality as the predictors – revealed that sociability did not predict the ascription of HU for four of the five groups (all except the Russians). For Moroccans, neither competence nor sociability was significant predictors. For Russians, competence and sociability did not differ from each other, $z = .056, p = .280$. For Germans ($z = .168, p = .046$), Italians ($z = 1.850, p = .032$), and Peruvians ($z = 3.48, p < .001$) competence was a more important predictor

Table 4. Multiple regression analyses of humanness (HU) as a function of morality, sociability, competence, and likeability

Predictor	Germans		Russians		Italians		Moroccans		Peruvians	
	β	t	β	t	β	t	β	t	β	t
Morality	.365	4.31**	.232	2.71**	.312	3.82**	.471	5.01**	.307	2.78**
Sociability	.100	1.44 ^{ns}	.259	3.61**	.113	1.57 ^{ns}	.106	1.37 ^{ns}	.015	0.197 ^{ns}
Competence	.321	4.60**	.329	4.94**	.353	4.72**	.124	1.57 ^{ns}	.458	5.35**
Likeability	.267	3.53**	.322	4.34**	.224	2.94**	.192	2.29*	.094	1.04 ^{ns}

Note. ns = Not significant. * $p < .05$; ** $p < .01$.

than sociability. By contrast, competence and morality equally concurred in predicting HU traits. Indeed, morality and competence did not differ from each other for Germans ($z = .36, p = .359$), Russians ($z = .76, p = .223$), Italians ($z = .33, p = .369$), or Peruvians ($z = 1.29, p = .099$). Surprisingly, for Moroccans the greatest weight of the predictor variables in the equation is transferred to the morality dimension ($\beta = .471, t = 5.01, p < .01$). Moreover, morality has a greater power than sociability in predicting HU for Moroccans ($z = 2.93, p = .002$), Peruvians ($z = 2.19, p = .014$) and Italians ($z = 1.52, p = .06$). Scores did not differ for Russians ($z = .21, p = .418$) and Germans ($z = 2.05, p = .20$).

In summary, Study 1 shows that sociability and morality do not play the same role. Thus, sociability has a greater overlap with HN than morality. Competence, unexpectedly, shares predictive potential with sociability for at least some groups. Furthermore, the attribution of HU mainly relates to competence and morality.

Study 2

In Study 2, we aimed to test our hypotheses by manipulating the stereotypical description ascribed to an outgroup target. To do so, we conducted an experiment using hypothetical scenarios. Specifically, we experimentally manipulated the levels of competence, sociability, and morality ascribed to a fictitious social group (following the procedure by Brambilla et al., 2012). Hypothetical scenarios allowed us to avoid possible confounds due to group relations constrained by actual historical circumstances.

Method

Participants

We recruited participants from introductory psychology courses at a large Spanish university. All those who agreed to participate were involved in the study ($N = 304$; $M_{\text{age}} = 20.4, SD_{\text{age}} = 4.55, 266$ female) and obtained partial course credit.

Materials and Procedure

We asked participants to take part in a study about impression formation. Specifically, we informed participants that we would provide some characteristics of the members of an imaginary social group, the Ortandesians and rate the group based on the information provided. This information used the same traits as those used in Study 1: competence (i.e., competent, intelligent, and skillful), sociability (i.e., friendly, warm, and likable), and morality (i.e., honest, sincere, and trustworthy). The information described the group as high versus low in each of the three dimensions.

Therefore, the study employed a 2 (morality: high vs. low) \times 2 (sociability: high vs. low) \times 2 (competence: high vs. low) between-participants design. Participants were randomly exposed to one of the eight experimental conditions.

After the description, participants were asked to rate the group on sociability (1 = *they are not at all sociable*; 10 = *they are very sociable*), morality (1 = *they are not at all moral*; 10 = *they are very moral*), and competence (1 = *they are not at all competent*; 10 = *they are very competent*). Finally, as in Study 1, participants reported their general impression of the group ("What is your overall impression of the Ortandesians?") on a scale of 0 (= *completely negative*) to 10 (= *completely positive*) to control the effect of the attractiveness of each group on the dependent variable.

Finally, we asked participants to indicate on a scale of 1 (= *not applicable at all*) to 7 (= *fully applicable*) the extent to which each of the 18 traits could be applied to the Ortandesians. The traits were the same as those used in Study 1, and the analysis of internal consistency of the humanness traits was similar to those obtained in Study 1 ($\alpha = .79$ for HN and $\alpha = .76$ for HU).

Results and Discussion

Manipulation Check

As a manipulation check, we conducted a multivariate analysis of variance (MANOVA) considering the manipulation of competence, sociability, and morality of groups as between-participant factors, and the impression of competence, sociability, and morality as the dependent variables. The results showed that the main multivariate effects of the

manipulation of the three stereotypical dimensions were significant: $F(3, 294) = 490.48, p < .001, \eta^2_p = .83$, for competence; $F(3, 294) = 530.93, p < .001, \eta^2_p = .84$, for sociability, and $F(3, 294) = 227.41, p < .001, \eta^2_p = .70$, for morality. Of greater importance for our hypotheses was the fact neither two-way interactions ($F_s < 1.26$) nor the three-way interaction ($F = 2.20, p = .088$) were significant. Thus, this result shows that competence, sociability, and morality manipulation independently influenced the stereotypical profile of the groups of Ortandesians. Subsequent t -test analyses for independent samples showed that the group was rated more competent in the high competent condition ($M = 8.71, SD = 1.24$) than in the low competent condition ($M = 2.31, SD = 1.75$), $t(302) = 36.82; p < .001, d = 2.12, 95\% CI [1.92, 2.31]$. Moreover, participants rated the group as more sociable in the high sociability condition ($M = 8.26, SD = 1.41$) than in the low sociability condition ($M = 1.81, SD = 1.59$), $t(302) = 37.44; p < .001, d = 2.15, 95\% CI [1.94, 2.36]$. Finally, the analysis showed that the group was rated as more moral in the high morality condition ($M = 7.62, SD = 1.61$) than in the low morality condition ($M = 2.47, SD = 1.87$), $t(302) = 25.73; p < .001, d = 1.48, 95\% CI [1.31, 1.64]$.

Relationship Between Stereotypical Dimensions and HN Traits

To establish how the three stereotypical dimensions are associated with humanness in HN independently from the likeability, an analysis of covariance (ANCOVA) was run of 2 (competence: high vs. low) \times 2 (sociability: high vs. low) \times 2 (morality: high vs. low) in which the likeability was included as a covariate. The analysis yielded a main effect of the covariate, $F(1, 295) = 47.56, p < .001, \eta^2_p = .14$. Importantly, we also found a main effect of sociability, $F(1, 295) = 83.75, p < .001, \eta^2_p = .22$. In line with our hypothesis, in the high sociability condition the group was perceived as higher in HN ($M = 4.46, SD = 0.85$) than in the low sociability condition ($M = 3.56, SD = 0.82$). We did not find a main effect of competence, morality, or interactions (see means and standard deviations for all conditions in Table 5).

Relationship Between Stereotypical Dimensions and Human Uniqueness Traits

The ANCOVA of 2 (competence: high vs. low) \times 2 (sociability: high vs. low) \times 2 (morality: high vs. low) with the

Table 5. Means and standard deviations (in brackets) of HN and HU as a function of experimental conditions (without covariate)

Competence	Sociability	Morality	HN (SD)	HU (SD)
High	High	High	5.13 (0.68)	5.28 (0.73)
		Low	4.23 (0.62)	4.36 (0.49)
	Low	High	3.72 (0.64)	4.50 (0.56)
Low	High	Low	3.30 (0.67)	3.74 (0.65)
		High	5.10 (0.65)	4.43 (0.59)
		Low	4.14 (0.86)	3.43 (0.82)
	Low	High	3.56 (0.84)	3.42 (0.97)
		Low	2.85 (0.87)	2.64 (0.99)

Note. HN = human nature; HU = human uniqueness.

likeability of the group as a covariate was run with HU as a dependent variable. The analysis revealed a main effect of the covariate, $F(1, 295) = 70.87, p < .001, \eta^2_p = .19$. We also found a main effect of competence, $F(1, 295) = 110.36, p < .001, \eta^2_p = .27$. Thus, the group was rated higher in HU in the high competence condition ($M = 4.40, SD = 0.82$) than in the low competence condition ($M = 3.57, SD = 1.06$). We also found a main effect of sociability, $F(1, 295) = 11.44, p = .001, \eta^2_p = .04$. Thus, the group was perceived higher in HU in the high sociability condition ($M = 4.14, SD = 0.93$) than in the low sociability condition ($M = 3.82, SD = 1.04$). Finally, we also found a main effect of morality, $F(1, 295) = 4.02; p = .046; \eta^2_p = .01$, revealing that the group was rated higher in HU in the high morality condition ($M = 4.09, SD = 0.98$) than in the low morality condition ($M = 3.87, SD = 0.97$). We found no other effects (see means and standard deviation for all conditions in Table 5).

Given that we anticipated that competence would have a greater role in predicting HU scores, we compared the effect sizes for the main effects of morality, sociability, and competence. We first converted the effect size indicators to Fisher's z ($z = .38, z = .31, and z = .53$, respectively) and then tested whether there was a significant difference between them (for similar procedures, see Rosenthal & Rosnow, 1984, p. 372; Rule & Ambady, 2008). This revealed that the effect of competence was reliably stronger than the morality ($z = 2.40, p = .001$) and sociability effects ($z = 2.40, p < .001$). The sociability and morality effects did not differ, $z < 1$. Taken together, these findings suggest that sociability and competence have greater power in predicting HN and HU, respectively.¹

¹ The relationship between stereotypical dimensions and HN trait without the covariate yielded a main effect of sociability, $F(1, 296) = 234.19, p < .001, \eta^2_p = .442$. We also found a main effect of morality, $F(1, 296) = 78.08, p < .001, \eta^2_p = .209$, and a main effect of competence, $F(1, 296) = 4.67, p < .031, \eta^2_p = .016$. However, the main effect of sociability was stronger than the other two ($p < .001$). The relationship between stereotypical dimensions and HU traits without the covariate yielded a main effect of competence, $F(1, 296) = 134.19, p < .001, \eta^2_p = .312$, morality, $F(1, 296) = 102.68, p < .001, \eta^2_p = .258$, and sociability, $F(1, 296) = 87.78, p < .001, \eta^2_p = .229$. However, the main effect of competence was marginally stronger than the effect of sociability ($z = 1.48, p = .06$). In addition, the main effects competence and morality did not differ ($z = 1.19, p = .11$).

General Discussion

The present research aimed to test the relationship between the stereotypical dimensions of sociability, morality, and competence and the attribution of humanness. Across two studies, we found that sociability, morality, and competence related differently to HN and HU. Thus, Study 1 partially confirmed Hypothesis 1, suggesting that competence has greater power in predicting HU than sociability. However, morality also played a role. Study 2 confirmed Hypothesis 1 by revealing that human uniqueness is significantly more related to competence than sociability and morality, especially when we control for global impressions elicited by the target group. This latter finding replicated the findings reported by Paladino and Vaes (2009) and Jones-Lumby and Haslam (2005). Indeed, Vaes and Paladino (2009) found that those attributed the most to HU traits were the high-competence and low-warmth outgroups. Moreover, Jones-Lumby and Haslam (2005) found that the competence dimension better fits the axis representing the HU dimension in their multidimensional scaling analysis than the axis representing the warmth dimension. However, none of these previous studies considered the sociability and morality components of warmth. By doing so, our work suggests that, although competence has great power in predicting HU, morality still plays a role, at least when real groups are considered and when humanity perception is studied without controlling for general impressions. This would be in line with early works on dehumanization that show that perceived humanness and moral status are associated, and denying others their humanness justifies their immoral treatment (Bandura, 1999; Castano & Giner-Sorolla, 2006). Specifically, in his early studies, Haslam proposed that HU attributes include high cognition processes and moral sensibility (Haslam, 2006; Haslam et al., 2005, 2013; Loughnan & Haslam, 2007). This is why people who are linked to animals are denied HU and seen as immoral or amoral.

Hypothesis 2 posited that HN would be more related to sociability than morality. Our results confirmed these insights. As we have already pointed out, sociability and human nature traits share the same resources and skills necessary to establish social connections. Li et al. (2014) suggested this as well, anticipating that the dimension of warmth would conceptually correspond to the profile formed by the HN traits. In this sense, splitting morality from sociability facilitated the identification of the statistical relationship between sociability and HN. Importantly, our work reveals that the previously suggested overlap between warmth and HN (Jones-Lumby & Haslam, 2005; Paladino & Vaes, 2009) might be better referred to as the sociability component of warmth.

Finally, with Hypothesis 3, we looked to confirm that competence plays a less relevant role in shaping the ascrip-

tion of HN, compared with sociability and morality. Study 2 considered fictitious groups and revealed that sociability was the only factor that explains the variance in the attribution of HN. In Study 1, these results were confirmed when Russians were taken into account. Indeed, sociability is a more powerful predictor than competence. However, for the other target groups, sociability and competence exert the same power in predicting HN. Such a finding represents an important nuance that should be confirmed by further research and by considering a wider range of social categories.

Our results contribute to the literature on the perceptual processes that give rise to stereotypes and the attribution of humanness. Starting from the idea that impression formation is a multicomponent process, our study complements previous research on the relative role of competence and warmth by splitting the information on sociability and morality in this latter dimension. In particular, it is important to highlight the relevance of moral information in conjunction with sociability in judgments about the humanness of outgroups.

Undoubtedly, more research is needed to explore the potentially interactive contribution of morality, sociability, and competence in attributing humanness. It would be interesting to go beyond a general perception based on fictitious groups and study the relationship between stereotypical representations and attributions of humanness considering a wide range of social groups. Especially relevant would be studies investigating the relationship between sociability and morality and the roles they play in attributing the dimensions of humanness in relation to both outgroups and ingroups. Moreover, recent research has shown that at least two different facets may define competence: ability and assertiveness (Abele et al., 2016). Thus, an important avenue for further research would be to test how the different characteristics of competence relate to humanness and its denial. Studying the connections between different models of social perception would contribute to scientific progress improve our understanding of the processes through which discrimination and prejudice are established and perpetuated.

Electronic Supplementary Materials

The electronic supplementary material is available with the online version of the article at <https://doi.org/10.1027/1864-9335/a000454>

ESM 1. Table E1: Correlations between the three stereotypical dimensions and the two humanness dimensions (Study 1). Table E2: Variance inflation factors (VIF) (Study 1).

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History

Received February 17, 2021

Revision received June 16, 2021

Accepted June 25, 2021

Published online August 19, 2021

Authorship

All authors were involved in all parts of the research. Armando Rodríguez-Pérez contributed to conceptualization, supervision,

methodology, design of Study 2 and its preliminary study, formal analysis, writing – original draft, writing – review, funding acquisition, project administration, resources, investigation. Marco Brambilla contributed to conceptualization, supervision, methodology, formal analysis, writing – original draft, writing – review. Verónica Betancor contributed to writing – review, funding acquisition, investigation, project administration, resources. Naira Delgado contributed to methodology, design, writing – review. Laura Rodríguez-Gómez contributed to design of Study 1 and its pilot study, software, data collection, data curation, formal analysis, visualization, writing – review, and editing.

Open Data

Materials and data for Studies 1 and 2 are available at <https://osf.io/2evcw/>

Funding

This work has been supported by the Ministerio de Economía y Competitividad (no. PID2019-108217GB-I00) to Verónica Betancor.

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