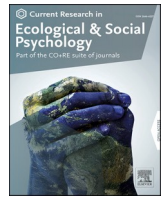


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# The role of agency and communion in humanness conceptualization- a multi-measure and method approach

Magdalena Formanowicz<sup>a,1,\*</sup>, Maria Laura Bettinsoli<sup>a,b,1</sup>, Agnieszka Pietraszkiewicz<sup>c</sup>, Tamar Saguy<sup>d</sup>

<sup>a</sup> Center for Research on Social Relations, Department of Psychology, SWPS University of Social Sciences and Humanities in Warsaw, ul. Chodakowska 19/31, Warszawa 03-815, Poland

<sup>b</sup> Department of Developmental Psychology and Socialisation and Department of Political Science, Law and International Studies, University of Padova, Italy

<sup>c</sup> University of Bern, Switzerland

<sup>d</sup> Psychology Department, Interdisciplinary Center (IDC), Herzliya, Israel

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## ABSTRACT

Among the main factors considered as predictors of humanness attribution were agency and communion. Agency constitutes an ability to affect one's own situation and communion an ability to form meaningful relationships with others. Seen as a cross-culturally universal framework for how people construe the world, these dimensions have been theorized to be pivotal for seeing others as humans and accordingly as less than humans. However, research testing the predictive power of agency and communion (or more fine-grained distinction of sociability and morality) for humanness ratings is showing a complex picture. Part of this complexity can be attributed to non-independence of measures used in previous research, as some traits pertaining to agency and communion were also used in measuring humanness perception, thus posing a risk of multicollinearity. Furthermore, the strength of the relationship of agency and communion with humanness conceptualizations was never tested, thus not allowing to compare which (if any) predictor is stronger. To address these limitations, we asked participants to rate our focal variables both at trait and group levels (4 studies;  $N_{\text{tot}} = 2565$ ) in which we test the association of agency, communion (as well as morality and sociability), and different humanness measures. Across all studies, we also tested the strength of the relationship of agency and communion with humanness conceptualizations finding a stable and equal in strength relationship of agency and communion with humanness attribution.

## Introduction

Determining how people understand humanness is important, because denying others the very same features that contribute to humanness ascriptions can lead to dehumanization. Dehumanization is a psychological process in which individuals or groups are denied human qualities, which in turn can lead to alleviating moral concerns regarding violence and harm inflicted upon those considered *not quite human* (Bandura et al., 1975; Haslam, 2006; Kelman, 1973; Zlobina et al., 2023). Given the gravity of dehumanization and its consequences in the social realm, we find it essential to determine which factors play a role in lay conceptualizations of humanness and in the ascription of humanness to various groups.

In doing so we turn to agency and communion, as the two fundamental dimensions of how people perceive themselves, other individuals, and social groups (for an overview see Abele et al., 2021; Abele and Wojciszke, 2014). The first dimension, *agency* comprises traits such as assertiveness, persistence, or competence that facilitate goal achievement. The second dimension, *communion* comprises traits such as friendliness, empathy, or honesty that facilitate cooperation and ability of forming positive relations with others. Importantly for this research, communion has been expanded into *sociability* as a reflection of friendliness, and *morality* as a reflection of the ability to distinguish between right and wrong behavior (Brambilla et al., 2011). This differentiation allowed for a proper appreciation of morality as one of the key features in shaping social perception, whereas its role has previously been

\* Corresponding author.

E-mail address: [mformanowicz@swps.edu.pl](mailto:mformanowicz@swps.edu.pl) (M. Formanowicz).

<sup>1</sup> shared first authorship.

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overshadowed by the joint consideration of morality and sociability within the communion dimension<sup>2</sup> (Brambilla et al., 2021, 2011; Leach et al., 2007). Regardless of those theoretical considerations, all the dimensions are seen as a cross-culturally universal framework for social cognition (Abele et al., 2021), and are even granted the status of human universals (Abele et al., 2008; Durante et al., 2017; Ybarra et al., 2008). Considered as "the cornerstones of our humanness." (Freud, 2015), the Big Two dimensions may be seen as the key candidates predicting how human we see someone to be. Not surprisingly, therefore, agency, morality, and sociability have been theorized as pillars underlying attributions of humanness and consequently also of dehumanization (Haslam, 2006).

Despite the straightforwardness of the hypothesis that both agency and (features of) communion are important for humanness attribution, the empirical tests of that relationship are far from being conclusive. While some studies have shown that all these features are related to humanness (Rodríguez-Pérez et al., 2021), others have revealed the primary importance of agency (Formanowicz et al., 2018), communion (when sociability and morality are collapsed; Chu and Martin, 2021), or morality (Riva et al., 2016). Importantly as well, previous work applied different measures of dehumanization, making it likely that the previously observed strength of the big two-humanness link might have depended on the measure used. Therefore, in this research, our aim is to attend to the discrepancies observed in the previous work by addressing its limitations. Accordingly, the novelty of this work lies in a systematic and stringent test of the predictive power of agency, sociability, and morality (or agency and communion) for humanness ratings. Before we describe our studies in detail, we will first describe the results and limitations of the previous work linking the big two dimensions with humanness (or dehumanization).

### Big two and the dual model of dehumanization

Most of the studies linking the big two with humanness conceptualized the latter construct within the framework of the dual model of (de-)humanization. The duality of the model pertains to two aspects: human nature (HN), features that are central but not exclusive to humans, and human uniqueness (HU), features that distinguish humans from nonhuman animals. HN is associated with emotional responsiveness, interpersonal warmth, cognitive openness, agency, and depth, while HU is associated with civility, refinement, moral sensibility, rationality, and maturity (Haslam, 2006). Being low on features related to HN or HU results in, respectively mechanistic or animalistic dehumanization (Haslam, 2006). Importantly, the theoretical model proposed by Haslam (2006) indicates an overlap with the big two model, because HN encompasses agency and sociability (i.e., warmth) - two of the key three traits within the updated big two framework (Brambilla et al., 2011), while HU encompasses the third trait of morality. Given that link between the big two dimensions and HN and HU, prior studies have examined the empirical connection between these dimensions. We will review first studies, in which participants rated both agency and (features of) communion as well as HN and HU of the same targets,<sup>3</sup> to turn later to the problems of that approach.

Studies examining the role of agency and communion (collapsed over morality and sociability dimensions) indicate that agency was related to HN (Jones-Lumby and Haslam, 2005), HU (Vaes and

Paladino, 2010), or to both humanness dimensions (Kuljian and Hohman, 2022). When it comes to communion however, the results were mixed with communion being related to both (Kuljian and Hohman, 2022) or to neither (Jones-Lumby and Haslam, 2005) of humanness dimensions. The discrepancies in the results for communion inspired research aiming to distinguish communion into sociability and morality (Rodríguez-Pérez et al., 2021). In Rodríguez-Pérez et al. (2021), participants rated five different national groups on agency, sociability, and morality, as well as on HN and HU. In line with Haslam's model, sociability was more important for explaining HN, while morality for HU ratings, whereas agency was both an important predictor of HN and HU. Importantly, when agency, morality, and sociability were used as humanness indicators, the effect sizes could be classified as large (for HN adjusted  $R^2$  varied from 0.44 to 0.52; for HU from 0.51 to 0.58).

An important limitation of the previous work is the confound among agency, communion, and humanness measures both at the theoretical and methodological level (see also Formanowicz et al., 2023b; Smith, 2023). As mentioned above agency, sociability, and morality are embedded into the Haslam model of (de)humanization. As a result, in previous studies a typical measure of HN and HU is not independent from measures of agency and communion (nor sociability or morality). Traits considered typical for HN comprise, for example, *active, curious, friendly, fun-loving, impatient, impulsive, jealous, and shy* (Haslam et al., 2005) or *curious, friendly, fun-loving, active, passionate, ambitious, emotional, energetic, imaginative, impatient, passive, distracted, impulsive, and excitable* (Rodríguez-Pérez et al., 2021). Traits considered typical for HU comprise for example: *broad-minded, humble, polite, thorough, disorganized, ignorant, rude, and stingy* (Haslam et al., 2005) or *tolerant, broadminded, mature, conscientious, humble, idealistic, talkative, conventional, artistic, absentminded, ignorant, frivolous, reserved, and learned* (Rodríguez-Pérez et al., 2021). This operationalization reflects the theoretical model proposed by Haslam (2006), in which agency and sociability are included in HN and morality in HU. As such, the measurements of morality, sociability, and agency and those of HN and HU are not independent and pose a high risk of multicollinearity, affecting the reliability and precision of the estimates (Alin, 2010). Furthermore, given that the scales of HN comprise agency and sociability, which are theoretically and empirically different constructs (Brambilla et al., 2011), they are likely to have low reliability (e.g., Gwinn et al., 2013; Lammers and Stapel, 2011). Thus, some researchers have adapted the HN and HU scales by choosing only some items, in a way that resulted in measures largely similar to those of communion and agency (Bastian et al., 2011; Terskova and Agadullina, 2019). For example, Terskova and Agadullina (2019) used three traits to measure HN: friendly, emotional, and kind-hearted and three traits to measure HU: analytical, rational, and conscious. Bastian et al. (2011) also measured HN with three traits: emotionally responsive, warm towards others, and rigid and cold (reversed). Their measure of HU comprised traits such as culturally refined, rational, or logical, or lacking self-restraint (reversed). While none of these two sets of studies linked HN and HU to the big two, which could result in the *idem per idem* problem where the same things are used as predictor and outcome variables, we mention them here to highlight the problem of the potential obscuring of the relation between the big two and HN and HU and emphasize the need for conceptual and measurement clarity. Accordingly, in this research when measuring HN and HU in Study 1, we do not use trait related measures of HN and HU but rely on measures that directly tap into the concept proposed in the original model, where HN is simply described as *an aspect of human nature* and HU as a feature *demonstrated solely by human beings and not by animals* (Formanowicz et al., 2018).

### Big two and the blatant model of dehumanization

The dual model of humanness assumed a list of attributes typical for the dimensions of humanness, which when denied results in seeing someone as not fully human, labelled also as subtle dehumanization.

<sup>2</sup> Nevertheless, sociability and morality are still considered to form a superordinate factor of communion (Abele et al., 2016); in this research therefore, we continue to use the label big two, however we also specify, when appropriate, whether we refer to morality and sociability separately.

<sup>3</sup> We omit, however, only a few studies that examined these variables differently. For example, the study in which when participants were presented with a group description filled with low HN or low HU traits and the task was to rate that group on agency and communion (Martínez et al. 2017).

Subtle dehumanization or inhumanization stands conceptually in contrast to blatant dehumanization, which reflects an explicit denial of humanness to different entities (Kteily et al., 2015; however, see Bastian et al., 2013; Kteily et al., 2015, Study 5 for examples of HU/HN that can be either subtle or blatant). Blatant dehumanization remains pervasive across myriad intergroup conflicts (Kteily et al., 2015) and is also dangerous because it is a strong predictor of discrimination, intergroup conflict, and violence (Kteily and Landry, 2022; Kteily et al., 2015). Importantly, subtle and blatant dehumanization are not strongly related (Kteily et al., 2015), and their relationship is still not fully understood (Haslam and Loughnan, 2014), therefore the results linking the big two with HN and HU cannot be easily extrapolated to blatant ascriptions or denial of humanity.

Indeed, knowing how agency, morality, and sociability relate to HN and HU is not equivalent to knowing how the three dimensions are related to blatant dehumanization measured with a generalized humanness indicator or a humanness thermometer (Chu and Martin, 2021; Formanowicz et al., 2018). Only one set of studies examined the link between agency, communion, and blatant dehumanization in a similar way as the studies examining the link between the big two and HN and HU.<sup>4</sup> Chu and Martin (2021) found that communion is more strongly related to blatant dehumanization. However, in their work measurement of agency and communion followed a description (or depiction) of targets for which agency and communion were intertwined. For example, in Study 4, participants evaluated a triangle and a circle from the classic Heider and Simmel film (1944). In the film, one object is characterized as agentic and malevolent, while the other object is perceived as rather passive but usually positively evaluated. Consequently, the two dimensions are mixed, representing either a combination of high agency and low communion or low agency and high communion. This makes it difficult to disentangle the role of each dimension in dehumanization. What's more important, however, none of the studies presented in Chu and Martin (2021) compared the coefficients of agency and communion - thus announcing the advantage of communion over agency in predicting humanness at a purely descriptive level. Overall, these shortcomings do not yet allow to make a clear inference as to whether communion or agency matters more in blatant dehumanization.

### Current research

Overall, we have identified three main weaknesses of the previous work, that we aim to address in the current work. First, when examining the role of the big two in dehumanization it is necessary to keep measures of agency and communion distinct from measures of humanness attribution, and some previous studies failed to follow that distinction. Therefore, across all studies, we measure the big two features in a way that is distinct from humanness measures. Second, previous studies rarely contrasted the coefficients of agency and communion. Such contrast would allow us to determine the relative role of each of the big two dimensions in humanness attribution. Therefore, across all studies, we compare coefficients of the big two features. Finally, studies

examining the role of agency and (features of) communion in dehumanization processes applied different measures of the latter construct. In Studies 1 and 2, therefore, while keeping all aspects of study design constant, we apply two different measures of humanness that were most often used when linking the big two with humanness ascription. While all those considerations may seem rather technical, they are necessary to move from the mere accumulation of single, often contradictory effects obtained in individual studies towards a coherent framework on how agency and communion matter in humanness conceptualization.

Accordingly, the current research examines the extent to which agency, sociability, and morality are related to HN and HU (Study 1) and to general humanness indicator (Study 2). With the use of the same methodology, but different humanness indicators, we will be able to examine the link between the big two dimensions and humanness to determine patterns of big two - humanness relationships for (a) subtle and blatant indicators of humanness; (b) measures of HN and HU that are not conflated with the measure of predictors.

To address these goals we applied a method that reveals relationships between variables at a more conceptual level (Abele and Wojciszke, 2007; Haslam et al., 2005). In Studies 1 and 2 participants rated 40 traits on agency, morality, and sociability as well as humanness indicators (HN and HU in Study 1 and general humanness indicator in Study 2). In Study 3, participants rated 99 traits on agency, communion, sociability, morality, and generalized indicator of humanness. As the correlation of sociability and morality was very high (0.86), we used agency and communion as predictors of humanness. In all the studies we applied equality constraints to test whether the strength of the relationship between agency, morality, and sociability (or communion) is comparable. Overall, the trait rating procedure is likely to reflect lay theories, that is what people distinctively associate with humanness, agency, morality, and sociability (Studies 1 and 2), or communion (Study 3). An added value of this work is, therefore, a set of 40 traits rated on agency, morality, and sociability, as well as HN and HU, and generalized humanness indicator (Study 1 and 2), and a set of 99 traits rated on agency, communion, morality, and sociability, and generalized humanness indicator (Study 3) - both datasets offering numerous possibilities for the future research.

To extend the findings obtained with the use of traits, we also conducted Study 4 to determine how the big two-humanness link varies across actual social targets. This is important because it is social groups rather than traits that are in fact the subjects of dehumanization. Attesting whether humanness is related to agency and communion both for traits and for groups, allows to form strong conclusions about the relationship between the big two dimensions and humanness ratings and to establish practical relevance of the presented theorizing and findings.

To study ascription of the big two dimensions and humanness to groups we used a version of the classic Princeton Trilogity method (Katz and Braly, 1933) that has successfully been employed in research evaluating stereotype content (e.g., Galinsky et al., 2013; Petsko and Bodenhausen, 2019). In this method, the first step (Study 3) relies on asking one group of participants to evaluate 99 traits on different dimensions (i. e., agency, communion, and humanness). This allows us to compute for each trait an average index representing how this trait is evaluated on a given dimension across participants. In the second step (Study 4), a different set of participants is asked to describe a social group "A" by selecting from the same pool of 99 traits all that apply to describe a stereotypical representative of group "A". Each trait selected by a participant is used to calculate an average index of agency, communion, and humanness, because for each chosen trait we can substitute it with a value for a given dimension based on ratings collected in Study 3. Thus, if a participant chose 5 traits representative of group "A", the value of agency assigned to group "A" for that person is an average of agency ratings assigned to these 5 traits based on Study 3 values. Similar procedure was applied to compute communion and humanness indices. As a result, for each participant evaluating group "A" we have created indices of agency, communion, and humanness. These indices were then

<sup>4</sup> While Formanowicz and colleagues (2018; see also Bettinsoli and Formanowicz, 2022) examined the unique role of agency and communion in dehumanization, their studies did not examine ratings of agency and communion as simultaneous predictors of humanness. They constructed manipulations which represented high and low agency (Studies 1, 2a, and 2b) or high and low communion (3a and 3b). Importantly, high vs. low agency (communion) conditions differed only with agency (communion) in the manipulation check and not with the other dimension. Ratings of agency and communion served only as manipulation checks and not as predictors of humanness, for which the experimental conditions were used. Formanowicz and colleagues (2018) claimed that when isolated from communion, agency predicts blatant humanness, whereas no such evidence was found for communion.

entered to a regression analysis to test how strongly agency and communion relate to humanness index and whether agency and communion equally relate to humanness (we applied a similar procedure across all studies presented in this research).

To increase the generalizability of the findings, in Study 4, participants were asked to evaluate a group identified by the intersection of gender, sexual orientation, and race (e.g., gay men). Participants were therefore randomly assigned to one of the sixteen possible groups. We included sixteen groups because, when evaluating real groups, it is important to consider that each group has a stereotype that comes with an initial association with agency and communion (Fiske et al., 2002). Therefore, it is necessary to include multiple groups to avoid drawing conclusions based on a single or a handful of groups.

It should be also emphasized that Study 4 included groups identified by the intersection of gender, sexual orientation, and race. The process of stereotyping is complicated because people do not belong to just one social group at a time (i.e., intersectionality; Crenshaw, 1989). A growing body of research shows that the intersection of these categories meaningfully affects the way people categorize and stereotype others (e.g., Collins, 1999; Purdie-Vaughns and Eibach, 2008; Cole, 2009; Bodenhausen, 2010). Study 4 therefore, responds to the request to theorize on multiple category memberships supporting the idea that intersections do not simply reflect the sum of constituent categories, rather they provide unique outcomes (Purdie-Vaughns and Eibach, 2008; Ghavami and Peplau, 2013; Ghavami et al., 2016; Preddie and Biernat, 2021). Notably, very little research on stereotypical attribution of agency and communion (e.g., gender and sexual orientation: Gender Inversion Theory, Kite and Deaux, 1987; Klysing et al., 2021) – and none to our knowledge - on humanness attribution – have considered an intersectional approach, thus, limiting our knowledge about how social categories are jointly related to stereotype content.

We report all data exclusions and measures; accompanying materials and data that support the findings can be accessed at [https://osf.io/twnyu/?view\\_only=ad8ed4f7d33e4e349a4b9116832dc529](https://osf.io/twnyu/?view_only=ad8ed4f7d33e4e349a4b9116832dc529) for Study 1 and 2, and at [https://osf.io/9kbgu/?view\\_only=406e7236a4e344c4b0e0f2d7aaf44e7f](https://osf.io/9kbgu/?view_only=406e7236a4e344c4b0e0f2d7aaf44e7f) for Study 3 and 4. Sample sizes for all the studies were determined using recommendations for nested designs and were equal or exceeded the required number of 100 participants (Maas and Hox, 2005). The studies were approved by the Ethical Board [University and the approval number blinded for the review process].

### Study 1

Study 1 applied a method of trait ratings (e.g., Abele and Wojciszke, 2007). Participants evaluated the list of traits on agency, morality, and sociability, as well as on human nature and uniqueness.

#### Method

##### Participants

All participants were recruited through Amazon Mechanical Turk and compensated 60 cents for participation. We excluded eight participants based on attention check questions used in a previous work (Formanowicz et al., 2018). The final sample consisted of 69 women and 108 men ( $M_{Age} = 35.53$ ,  $SD = 12.45$ ), all English native speakers.

##### Procedure and materials

Participants evaluated agency, sociability, morality, and humanness of 40 traits obtained from previous research (Haslam et al., 2005). Specifically, participants indicated the extent to which each trait is valuable for the orientation towards: “actions, being efficient and striving to achieve goals” (representing agency; Abele and Wojciszke, 2007), “being friendly and caring about warm relations with other people” (representing sociability), and “principled relations with other people, distinguishing between right and wrong behavior and being moral” (representing morality; Brambilla et al., 2011) on scales ranging

from 1 to 7. To evaluate humanness for each trait, participants indicated to which extent each trait represents HN (“an aspect of human nature”) and HU (“demonstrated solely by human beings and not by animals;” Haslam et al., 2005) on a scale ranging from 1 to 7 (please see online repository for the exact instruction).

### Results and discussion

To control for within-participant variance in the judgments of traits, we analyzed the ratings as nested in participants to obtain a robust standard error estimation using the Mplus software (Muthén and Muthén, 2017). For correlations, see Table 1. For the trait ratings, see Table S1 in the online repository referenced above.

In the first step, a model was tested with all three variables used simultaneously as predictors of HN and HU. Given the theoretically assumed orthogonality of the two latter dimensions (Haslam, 2006), their correlation was fixed to 0 (the correlation of the two indices in the model equaled 0.09 and was not significant  $p = .49$ ). The results of this model indicated that, while the agency is related to both HN and HU ratings, sociability was only relevant for HN and morality for HU. The second model presents the results when the two insignificant coefficients (morality for HN and sociability for HU) were fixed to 0. The nonsignificant  $X^2$  difference test between Models 1 and 2 indicated that the second model fitted the data equally well, and morality can be considered irrelevant for HN, while sociability irrelevant for HU. Model 3 tested whether agency and sociability were similarly related to HN, while agency and morality were similarly related to HU. For that purpose, we applied equality constraints to the respective pairs of coefficients. The nonsignificant  $X^2$  difference test between Models 2 and 3 indicated that the third model fitted the data equally well, and the pair of coefficients can be seen as predictors of similar strength. Table 2 presents the model results, whereas Fig. 1 presents the graphical model of the obtained results.

### Discussion

In Study 1 we asked participants to evaluate a list of 40 traits on agency, morality, and sociability, as well as on HN and HU. This is an important first step to establish how these concepts overlap with each other while simultaneously testing the strengths of agency, sociability, and morality in relationship with humanness ascriptions. We found that agency and sociability (but not morality) are related to HN, while agency and morality (but not sociability) relate with HU, confirming Haslam’s theoretical model (2006). In fact, splitting communion into sociability and morality is crucial when considering the different conceptualizations of humanness since they relate differently to HN and HU.

**Table 1**  
Means, standard deviations, and correlation coefficients in study 1.

Variable	M	SD	Sociability	Morality	HN	HU
Agency	3.57	2.11	.53*** [.51; 0.54]	.53*** [.53; 0.55]	.27*** [.24; 0.29]	.14*** [.12; 0.17]
Sociability	3.65	2.15		.72*** [.71; 0.73]	.23*** [.20; 0.25]	.09*** [.07; 0.12]
Morality	3.55	2.04			.19*** [.17; 0.21]	.14*** [.12; 0.16]
HN	4.52	1.73				.06*** [.04; 0.09]
HU	3.76	2.17				

Note. 95% Confidence Intervals in Brackets; \*\*\* $p < .001$ .

**Table 2**

Unstandardized coefficients followed by standard errors for the models tested in study 1.

	Study 1 – Model 1		Study 1 – Model 2		Study 1 – Model 3	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
For HN						
Agency	0.17***	0.03	.17***	0.03	.13***	0.01
Sociability	0.10***	0.03	.10***	0.02	.13***	0.01
Morality	–0.01	0.03	.00	0.00	.00	0.00
R <sup>2</sup>	.08***	.02	.08***	.02	.08***	.02
For HU						
Agency	0.11***	0.02	.10***	0.02	.10***	0.01
Sociability	–0.05	0.03	.00	0.00	.00	0.00
Morality	0.12***	0.03	.09***	0.03	.10***	0.01
R <sup>2</sup>	0.03**	.01	.03**	.01	.03**	.01
Model Indices						
X <sup>2</sup> (df)	0.48 (1)		2.10 (3)		5.18 (5)	
X <sup>2</sup> p-value	.49		.55		.39	
Δ X <sup>2</sup> (Δdf)			1.99 (2)		3.85 (2)	
Δ X <sup>2</sup> p-value			.37		.15	
RMSEA	.00		.00		.002	

Note. Coefficients in italics in Model 2 are after setting two insignificant coefficients to 0 and in Model 3 after equality constraint was set. Chi-square difference was estimated using the Satorra-Bentler scaled chi-square (Satorra and Bentler, 2010). \*\*  $p < .01$ ; \*\*\* $p < .001$ .

**Study 2**

Study 2 used the same focal variables as in Study 1 and examined their associations with an indicator of a different measure of humanness, namely, blatant humanness.

**Method**

**Participants**

All participants were recruited through Amazon Mechanical Turk and compensated 65 cents for participation. We excluded 11 participants based on the same attention check questions as in Study 1, and additional 30 participants for their lack of consent or massive missing data. The final sample consisted of 71 women and 118 men ( $M_{Age} = 34.50$ ;  $SD_{Age} = 10.58$ ), all English native speakers.

**Procedure and materials**

As in Study 1, participants rated traits on morality, sociability, agency. Moreover, we asked participants to rate each trait on humanness using a one-item humanness thermometer from previous research (Formanowicz et al., 2018), where the answer format ranged from 0% to 100% and the instructions read: “Psychological studies show that people tend to attribute different levels of humanness to different traits. The following scale represents humanness levels. 0 represents a very low degree of humanness and 7 represents a very high degree of humanness. Choose a number that represents the level of humanness for each trait.”

**Results and discussion**

To control for within-participant variance in the judgments of traits, we analyzed the ratings as nested in participants to obtain a robust standard error estimation using Mplus software (Muthén and Muthén, 2017). For correlations, see Table 3. For the trait ratings, see Table S2 in the online repository referenced above.

In the first step, a saturated model was tested with all three variables used as predictors of humanness. As indicated in Table 4, all variables related to humanness ratings. When the three coefficients were constrained to be equal, the final model fitted the data very well, suggesting that agency, sociability, and morality are related to humanness to a similar extent.

**Discussion**

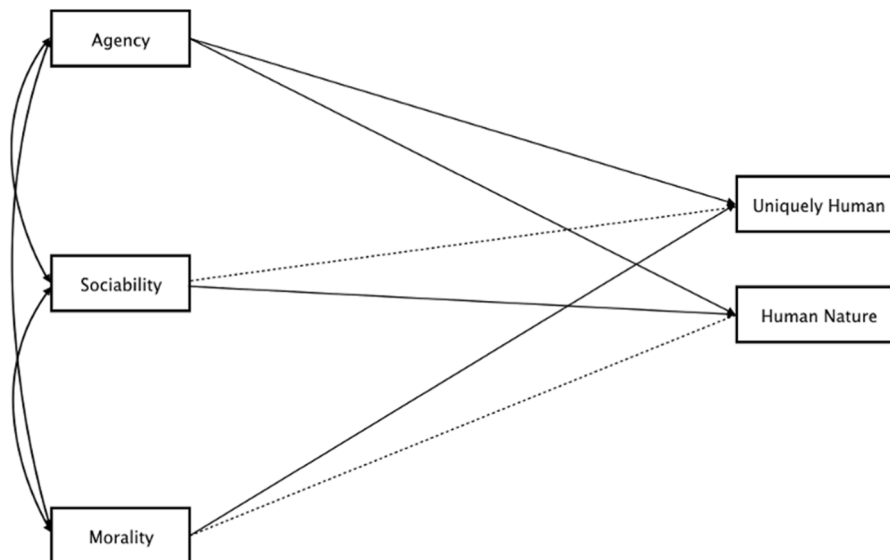
Study 2 used the same methodology of Study 1 but measured humanness concept by including a single item adopted in previous

**Table 3**

Means, standard deviations, and correlation coefficients in study 2.

Variable	<i>M</i>	<i>SD</i>	Sociability	Morality	Humanness
Agency	3.92	2.12	.63*** [.62; 0.64]	.64*** [.62; 0.65]	.54*** [.53; 0.56]
Sociability	3.96	2.07		.73*** [.72; 0.74]	.58*** [.56; 0.59]
Morality	3.97	2.03			.55*** [.54; 0.57]
Humanness	58.04	30.69			

Note. 95% confidence intervals in brackets; \*\*\* $p < .001$ .



**Fig. 1.** Conceptual representation of the obtained results of study 1.

Note. The dotted line represents nonsignificant predictors that were fixed to 0 in Model 3.

**Table 4**

Unstandardized coefficients followed by standard errors for the models tested in study 2.

	Study 2 – Model 1		Study 2 – Model 2	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Agency	3.49***	0.33	3.53***	0.17
Sociability	4.22***	0.43	3.53***	0.17
Morality	2.88***	0.44	3.53***	0.17
R <sup>2</sup>	.40***	.03	.40***	.03
Model Indices				
X <sup>2</sup> (df)			3.77 (2)	
X <sup>2</sup> p-value			.15	
RMSEA			.01	
CFI			0.997	
TLI			0.995	

Note. Coefficients in italics refer to the equality constraints in Model 2.

\*\*\**p* < .001.

research. Interestingly, results showed that agency, sociability, and morality conceptualizations are equally related to humanness attribution signaling a strong relationship between all the concepts, that is—the traits rated valuable for understanding agency, sociability, and morality conceptually overlap with those considered valuable for understanding humanness as a concept.

### Study 3

Studies 3 and 4 follow the procedure from [Petsko & Bodenhausen \(2019\)](#). Study 3 was a trait rating study (as Studies 1 and 2), with the number of traits extended to 99. In Study 4, different participants chose from the same 99 traits all that applied to describe a stereotypical member of one of the social groups. Knowing which traits participants chose in Study 4, allowed us to utilize knowledge about the chosen trait rating (obtained from Study 3) and for each participant and each dimension compute an average index of agency, communion, or humanness applied by the participant to the given group (for detailed description see Methods section for Study 4).

### Participants

All participants were recruited through American Prolific Academic and compensated 85 cents.

**Humanness dimension.** A total of 115 American participants completed the survey. 62 participants identified as male, 51 as female, and remaining two participants identified as transgender. Participants' ages spanned from 18 to 67 ( $M = 32.2$ ,  $SD = 11.4$ ), and more than half (63.4%) of the sample reported having a college degree or higher. The sample was predominately White (67.2%) and heterosexual (76.2%).

**Agency dimension.**<sup>5</sup> A total of 122 American participants completed the survey. 49 participants identified as male and the remaining 73 as female. Participants' ages spanned from 18 to 70 ( $M = 32.7$ ,  $SD = 11.3$ ), and more than half (62.6%) of the sample reported having a college degree or higher. The sample was predominately White (62%) and heterosexual (82.6%).

**Sociability dimension.** A total of 102 American participants completed

<sup>5</sup> In this article we used the three-fold distinction of agency, morality, and sociability in relationship to humanness ratings (Study 1 and 2). It has to be noted, however, that there exists also a model in which agency has also a competence component ([Abele et al. 2016](#)). Nevertheless, subcomponents of agency and communion are still associated to the two super-ordinate dimensions and as evidence in this research morality and sociability are highly correlated. Study 3 had multiple dimensions on which traits were rated including competence. Here as well agency and competence correlated at .85, therefore we kept the original dimension of agency in Study 3 and 4.

the survey. 14 participants identified as male, 86 as female, and two participants identified as nonbinary. Participants' ages spanned from 18 to 79 ( $M = 28.2$ ,  $SD = 10.9$ ), and more than half (54%) of the sample reported having a college degree or higher. The sample was predominately White (74%) and heterosexual (67%).

**Morality dimension.** A total of 100 American participants completed the survey. 17 participants identified as male, 79 as female, and remaining four participants identified as transgender and nonbinary. Participants' ages spanned from 18 to 66 ( $M = 28.9$ ,  $SD = 10.8$ ), and more than half (52%) of the sample reported having a college degree or higher. The sample was predominately White (83%) and heterosexual (67%).

**Communion dimension.** A total of 121 American participants completed the survey. 70 participants identified as male, 49 as female, one participant identified as nonbinary, and one did not indicate their gender. Participants' ages spanned from 18 to 70 ( $M = 33.2$ ,  $SD = 10.8$ ), and more than half (57.8%) of the sample reported having a college degree or higher. The sample was predominately White (64.4%) and heterosexual (78.5%).

**Procedure.** Depending on the condition, participants rated the 99 traits on either humanness, agency, communion, sociability, or morality dimension. Participants indicated the extent to which each trait prototypically refers to "competence, assertiveness, decisiveness, oriented to goal-achievement and task functioning" (i.e., agency; [Abele and Wojciszke, 2007](#)); "helpfulness, trustworthiness, oriented to maintain relationships and social functioning" (i.e., communion; [Abele and Wojciszke, 2007](#)); "the tendency and accompanying skills to seek out companionship, engage in interpersonal relations, and participate in social activities" (i.e., sociability; American Psychological Association Dictionary, 2021); and "a person holding a system of beliefs –or set of values– relating to right conduct (i.e., doing good things for another person or society, maintaining moral rules, living cooperatively), against which behavior is judged to be acceptable or unacceptable" (i.e., morality; American Psychological Association Dictionary, 2021). To evaluate humanness, we used the one-item measure used in Study 2 and in previous research ([Formanowicz et al., 2018](#)). For all the aforementioned dimensions we used a scale ranging from 1 (not at all) to 7 (very much). Participants first were provided with a brief description of the dimension, then made their ratings and completed a demographic questionnaire.

### Results and discussion

Prior to doing any analyses, we averaged the ratings for each trait across participants, so that the analysis can be carried at the trait level (for a similar approach see [Abele and Wojciszke, 2007](#)). As evident in [Table 5](#), all the three variables used in Study 3 were significantly correlated.

As already mentioned, given the high correlation of morality and sociability, we decided to use the communion dimension. As a next step, we ran a linear regression to examine agency and communion-humanness link using MPlus software ([Muthén and Muthén, 2017](#)). It is important to note, that Studies 1 and 2 had a nested design, that is each participant evaluated 40 traits on each of the studied dimension. For Studies 3 and 4 we tested slightly different models given the nature of the data. In Study 3, all the dimensions were evaluated by different participants, hence the analysis was carried on a trait level and no nested design could be used. Accordingly, we estimated a saturated model, in which we could test the main hypothesis of this work by applying the Wald test of equality constraints (similar rationale applies to Study 4).

As indicated in [Table 6](#), both agency and communion related to humanness ratings. To determine whether the relationship of agency and communion to humanness is similar in strength, we tested the two coefficients for equality using the Wald test. The null hypothesis for that application is that the two parameters are equal. If the test is not significant, we cannot reject the null hypothesis. In Study 3, its results were

**Table 5**  
Means, standard deviations, and correlation coefficients in study 3.

Variable	M	SD	Agency	Communion	Sociability	Morality
Humanness	4.58	0.60	.65***[.49–0.80]	.72***[.58–0.86]	.79***[.67–0.92]	.68***[.53–0.83]
Agency	3.92	0.63	–	.58***[.42–0.75]	.69***[.52–0.82]	.61***[.45–0.77]
Communion	3.62	0.82	–	–	.87***[.76–0.97]	.94***[.86–1.0]
Sociability	3.91	1.15	–	–	–	.86***[.75–0.96]
Morality	3.75	1.25	–	–	–	–

Note. 95% confidence intervals in brackets.

\*\*\**p* < .001.

**Table 6**  
Unstandardized coefficients followed by standard errors in study 3.

	B	SE
Agency	0.33***	0.07
Communion	0.38***	0.05
R <sup>2</sup>	.61***	.05

\*\*\**p* < .001.

not significant:  $W(1) = 0.19, p = .66$ , indicating that the two coefficients were of similar magnitude.

**Discussion**

Study 3 showed to which extent each of the 99 traits was associated with the dimensions of humanness, agency, communion, morality, and sociability. Since sociability and morality were highly correlated, we included in the analyses only agency and communion, and as in Study 1 and 2, results revealed that agency and communion similarly relate to humanness attribution, signaling a consistent overlap between the stereotypical content of agency, communion, and humanness concepts.

Importantly, for each of the 99 traits, we computed a score of how stereotypically ‘human’, ‘agentic’, and ‘communal’ each trait was rated, on average. These ratings were then used to calculate to what extent the stereotypical content of these dimensions overlaps with traits selected as representative of the sixteen social categories included in Study 4.

**Study 4**

We asked a different set of participants to evaluate a social group and to choose among the same pool of 99 traits presented in Study 3, all those that apply to a typical member of that group. As a between subjects factor (participants were randomly assigned to evaluate only one group) we used 16 different groups identified at the intersection of gender (i.e., male or female), sexual orientation (i.e., heterosexual or homosexual), and race (i.e., Black, White, Asian, or unspecified). For every participant, we computed an average index of agency (the same procedure we applied also to communion and humanness) by summing values that the chosen traits received in Study 3 and dividing that by a number of chosen traits. Thus, if a participant chose three traits (trait<sub>1</sub>, trait<sub>2</sub>, trait<sub>3</sub>) to evaluate group "A", we computed an index of agency by adding values of agency each trait received in Study 3 and dividing that by 3 (number of traits chosen):  $trait_{1\_Agency} + trait_{2\_Agency} + trait_{3\_Agency} / 3$ .

The main aim of Study 4 was to replicate findings obtained in Studies 1 - 3 but this time applied to social groups through the lens of intersectionality. Specifically, we wanted to test (a) the conceptual overlap between the big two and participant’s lay conception of humanness and (b) the relative strength of agency vs. communion in relation to humanness attribution across sixteen different social groups.

**Participants.** A total of 1639 American Prolific Academic participants completed a survey in exchange for 80 cents. 54% of the sample identified as male (*N* = 887), 42% (*N* = 699) as female, as the remaining 4% self-identified as transgender, non-binary, or they preferred not to report any information. Participants’ ages spanned from 18 to 81 (*M* = 34.7,

*SD* = 13.5), and more than half (66.3%) of the sample reported having a college degree or higher. The sample was predominately White (65%) and heterosexual (78.4%).

**Procedure.** Participants completed a survey on “perceptions of various social groups.” They learned that this research aimed to investigate current societal stereotypes— defined as Americans’ culturally shared beliefs— about a target group. Participants were randomly assigned to list stereotypical traits about one of the sixteen target groups: “Asian gay men;” “Asian lesbian women;” “Asian men;” “Asian women;” “Black gay men;” “Black lesbian women;” “Black men;” “Black women;” “White gay men;” “White lesbian women;” “White men;” “White women;” “Gay men;” “Lesbian women;” “Men;” and “Women.” The overall design was a 2 (Target Gender: female, male) × 2 (Target Sexual Orientation: gay/lesbian, unspecified) × 4 (Target Race: Asian, Black, White, unspecified-race) between-person experiment.

Participants saw all 99 traits, arranged in a randomized order, and they were instructed to “select ALL the traits that are part of the current cultural stereotype of [target group],” regardless of whether they believe the stereotypes were true. After completing demographic variables, participants were debriefed.

**Results**

*Agency and Communion as predictors of humanness attribution in intersectional groups.* To establish the relationship between agency, communion, and humanness, we carried out sixteen separate linear regressions, one for each group. Agency and communion were included as the predictors in the model. As seen in Table 7, agency and communion related to humanness attribution for all the intersectional groups (with minor exceptions).

As for previous studies, we used MPlus software (Muthén and Muthén, 2017). For each group we ran a linear regression with agency and communion constrained to be equal and Wald test indicating the significance of that constraint - as explained for Study 3. Specifically, for Black women agency as compared to communion was stronger related to humanness attribution, whereas for White lesbian women communion (vs. agency) had a stronger relationship with humanness attribution. Consequently, for these groups, the more agentic (communal) the group was stereotyped, the more humanness was ascribed. We did not find any difference between agency and communion relationships with humanness attribution for all the other groups (all *p*’s > 0.07).

**Discussion**

Findings from Study 4 need to be read considering ratings obtained in Study 3. In fact, the procedure followed in Study 3 and 4 allowed us to identify the extent to which traits associated with agency, communion, and humanness dimensions overlapped with the stereotypical content associated with different social groups. Findings from Study 4 showed that similarly to Study 1, 2, and 3, agency and communion dimensions conceptually overlapped with humanness dimension, thus confirming the relationship between agency and communion with humanness perception. Agency and communion were related to humanness attribution with equal strength for the vast majority of the groups, signaling

**Table 7**  
Multiple regression analyses of humanness attribution as a function of agency and communion in study 4.

Target Group	Agency	Communion	R <sup>2</sup>	Wald Test of Parameter Constraints
Men (N = 101)	B = 0.310***, SE = 0.07	B = 0.302***, SE = 0.04	R <sup>2</sup> = 0.752***, SE = 0.06	W(1) = 0.008; p = .93
Women (N = 101)	B = 0.404***, SE = 0.08	B = 0.287***, SE = 0.05	R <sup>2</sup> = 0.781***, SE = 0.04	W(1) = 1.003; p = .32
White men (N = 99)	B = 0.449***, SE = 0.07	B = 0.295***, SE = 0.05	R <sup>2</sup> = 0.820***, SE = 0.03	W(1) = 1.707; p = .19
White women (N = 100)	B = 0.323***, SE = 0.07	B = 0.303***, SE = 0.05	R <sup>2</sup> = 0.756***, SE = 0.04	W(1) = 0.035; p = .85
Gay men (N = 98)	B = 0.402***, SE = 0.08	B = 0.305***, SE = 0.04	R <sup>2</sup> = 0.746***, SE = 0.04	W(1) = 0.839; p = .36
Lesbian women (N = 101)	B = 0.261***, SE = 0.10	B = 0.431***, SE = 0.05	R <sup>2</sup> = 0.717***, SE = 0.07	W(1) = 1.433; p = 23
White gay men (N = 101)	B = 0.201, SE = 0.11	B = 0.444***, SE = 0.05	R <sup>2</sup> = 0.689***, SE = 0.07	W(1) = 3.234; p = .07
White lesbian women (N = 102)	B = 0.182**, SE = 0.06	B = 0.421***, SE = 0.04	R <sup>2</sup> = 0.782***, SE = 0.04	W(1) = 6.94; p = .008**
Black men (N = 100)	B = 0.359***, SE = 0.10	B = 0.427***, SE = 0.06	R <sup>2</sup> = 0.884***, SE = 0.04	W(1) = 0.204; p = .65
Black women (N = 102)	B = 0.607***, SE = 0.08	B = 0.247***, SE = 0.04	R <sup>2</sup> = 0.883***, SE = 0.02	W(1) = 9.896; p = .002**
Black gay men (N = 100)	B = 0.572***, SE = 0.07	B = 0.392***, SE = 0.04	R <sup>2</sup> = 0.866***, SE = 0.03	W(1) = 3.43; p = .06
Black lesbian women (N = 100)	B = 0.377***, SE = 0.06	B = 0.357***, SE = 0.05	R <sup>2</sup> = 0.843***, SE = 0.03	W(1) = 0.043; p = .84
Asian men (N = 111)	B = 0.281***, SE = 0.05	B = 0.375***, SE = 0.05	R <sup>2</sup> = 0.711***, SE = 0.05	W(1) = 0.898; p = .34
Asian women (N = 107)	B = 0.284***, SE = 0.06	B = 0.360***, SE = 0.04	R <sup>2</sup> = 0.745***, SE = 0.05	W(1) = 0.857; p = .36
Asian gay men (N = 109)	B = 0.401***, SE = 0.06	B = 0.306***, SE = 0.03	R <sup>2</sup> = 0.799***, SE = 0.04	W(1) = 1.28; p = .26
Asian lesbian women (N = 107)	B = 0.379***, SE = 0.06	B = 0.423***, SE = 0.08	R <sup>2</sup> = 0.736***, SE = 0.06	W(1) = 0.16; p = .69

Note. \*\*p < .005, \*\*\*p < .001.

a conceptual overlap among all the three dimensions and the stereotypical content selected for these target group. There were two exceptions to that general pattern. For Black women, agency (vs. communion) had a stronger relationship with humanness attribution. Thus, in the case of Black women, agency turned out to have a stronger relation with their humanness. For White lesbian women, the reverse pattern appeared—that is, communion was more strongly related to humanness.

**General discussion**

We tested the predictive power of agency, sociability, and morality (Studies 1 and 2) or agency and communion (Studies 3 and 4) for humanness ratings. When humanness was considered in terms of HN and HU (Study 1), agency and sociability (but not morality) related to HN, while agency and morality (but not sociability) related to HU. When we

used a humanness thermometer as a measure (Study 2), all three dimensions—agency, sociability, and morality—showed a relationship of a similar magnitude. In Study 3 and 4, due to high correlation of sociability and morality, we used an indicator of communion to observe a similar pattern of results that agency and communion conceptually overlap with humanness ratings of traits (Study 3) and humanness attribution to 16 groups (Study 4).

These findings are important for the following reasons. The first relates to the empirical validation of Haslam’s (2006) theoretical model. When it comes to predictors of HN and HU, the results of Study 1 (and those of Rodríguez-Pérez et al., 2021) confirm that splitting communion into sociability and morality is important when analyzing humanness dimensions because of their different relations to HN and HU. In general, sociability was predominantly related to HN and morality to HU. This is a step forward, insofar as previous research examined communion as an overarching factor, finding the relationship with HN and HU was mixed. The difference between morality and sociability, however, seemed less important for the studies applying a blatant humanness measure, where both morality and sociability (Study 2) as well as communion (Study 3) were related to humanness on par with agency.

In terms of agency, however, the results of Study 1 were only partially in line with Haslam’s model (2006). In some studies (Kuljian and Hohman, 2022 - Study 2; Rodríguez-Pérez et al., 2021 - Study 1; Study 1 in this article), agency was related to HN, which is consistent with Haslam’s model. However, agency was also related to HU ratings in many studies (Kuljian and Hohman, 2022- Study 2; Rodríguez-Pérez et al., 2021- Studies 1 and 2; Study 1 in this article). This is consistent with previous research on agency and communion, in which agency was both related to HN (Jones-Lumby and Haslam, 2005) and HU (Vaes and Paladino, 2010). Importantly, agency was also an important predictor of humanness, when operationalized as a generalized indicator (Formanowicz et al., 2018; Study 2, 3 and 4 in this article). The consistent relation of agency with manifestations of humanness is in accord with a growing number of studies addressing the priority agency receives in information processing (Frith and Frith, 2010; Wilson et al., 2022). Paying attention to agentic targets may be important, as they can be the best allies when friendly and the worst enemies when malicious. Accordingly, agency is particularly relevant when looking at others from the perspective of one’s own goals (Abele and Wojciszke, 2007). The importance attributed to agency can be why agency is consistently associated with humanness.

In this work both agency and communion were associated to humanness, whereas in some previous work (Formanowicz et al., 2018; see also Formanowicz et al., 2023a) humanness perceptions were predominantly associated to agency or its correlates. A possible reason for this is that we here focused on the lay understanding of humanness, that is participants reasoned to what extent given trait is representative for agency, communion, and humanness. Similarly in other studies, participants assigned agency, communion, and humanness to different targets (e.g., Rodríguez-Pérez et al., 2021). Given that the conception of humanness often entails references to agency and communion (and they all share a positive valence component as discussed below), correlational studies do show the relationship of both dimensions to humanness. However, in situations in which we actually see or encounter information about agency (e.g., seeing physical objects overcoming an obstacle as in studies from Formanowicz et al., 2018 or learning that a group has achieved a success as in studies from Formanowicz et al., 2023a), its role in humanness ratings can be more relevant for evaluating others with respect to one’s own goals. This distinction between reasoning about and actual evaluation of humanness should be investigated further, as it could be important in explaining and targeting some paradoxical effects observed in research and reality. Specifically, while communion may be seen as important for what it means to be a human (Chu and Martin, 2021), it may play a minor role in actual judgments of humanness, as exemplified by the dehumanization of women (Bernard et al., 2012), who are typically evaluated as high in communion (Fiske



et al., 2002).

The findings of Study 2, 3, and 4 contrast also with previous research in which only communion was associated with blatant dehumanization (Chu and Martin, 2021). One of the possible explanations of this discrepancy is that perhaps the difference observed in Chu and Martin (2021) was only descriptive and if the authors compared the coefficients statistically, the difference could not be significant. Overall, our results point to the fact that the big two dimensions are important in humanness ascriptions.

It is also important to address a limitation of the present research—that is, we investigated lay conceptualizations of agency, communion, and humanness ascriptions by means of trait evaluation (except for Study 4 where social groups were included as targets of stereotypical content selection). In this way, this research can be considered of low ecological validity, as references to humanness ascriptions are studied either at the conceptual level (Studies 1–3) or very indirectly (Study 4). Indeed, as recently argued by Leader Maynard and Luft (2023), most dehumanization research often neglects elements that are critical to the genuine human experience of dehumanization. Therefore, it is crucial to consider and analyze also ideological, social, and cultural contexts to fully understand their influence on dehumanization and to investigate this process in the context in the realm of conflict, brutality, and extremism (Leader Maynard and Luft, 2023; Luft, 2015; Zlobina et al., 2023).

In line with this, an important overarching framework for the understanding of how agency and communion (or sociability and morality) can contribute to the humanness ascriptions or to dehumanization, is the Agency - Morality Dehumanization Model (Formanowicz et al., 2023a), in which dehumanization is related not only to universal attributes of humanness, but also to the external circumstances under which groups operate. For groups that are victimized or disadvantaged, their agency is limited due to constraints on their political, economic, or social rights, and they are subjected to negative stereotypes regarding their capabilities. Such groups can be dehumanized predominantly because of their low agency. On the other hand, for groups that are perpetrators or advantaged, dehumanization occurs when they exploit their advantage at the expense of others, thus violating their moral obligation to uphold human dignity. Accordingly, the basis of the dehumanization for such groups is low morality (or communion in general). In the neutral context of the studies presented here, both dimensions could play an equal role when ascribing humanness to others, however, in the context of unequal social relations, one dimension may become more important than the other - indicating that the process of dehumanization is rooted not only in socio-cognitive but also identity driven processes stemming for example from a desire for social dominance or to disengage from self-sanctions and reduce collective guilts (e.g., Castano & Giner-Sorolla, 2006; Kteily et al., 2015).

It is also important to note the difference in the variance explained by agency, sociability, and morality in reference to humanness. For the HN and HU the  $R^2$  was at the level of 8% and 3%, respectively. This may indicate that the relationships between the three factors and HN and HU are weak, especially when HN and HU are not measured via measures conflated with the big two (the  $R^2$ s were much larger using traditional measures of HN and HU applied in the previous research; Rodríguez-Pérez et al., 2021). Future studies could investigate whether other theoretically assumed factors (Haslam, 2006) are better related to HN and HU and why these humanness dimensions are so weakly related to the fundamental dimensions of social perception, and what role in that relationship can be attributed to the measurement. Additionally, it would be interesting to investigate lay conceptualizations of agency, communion (as well as sociability and morality), and humanness from a cross-cultural perspective. For instance, moral standard violations might differ as a function of cultural context (Graham et al., 2016), therefore (lack of) morality can be associated with (lower) humanness attribution towards social groups differently depending on the context in which they operate.

Another conclusion stemming from this research is that for a generalized indicator of humanness, all three dimensions of agency, sociability, and morality emerged as significant predictors and, to a similar extent, explained at least 40% of the variance in the humanness ratings. The comparison of effect sizes between Study 1 and other studies in this article indicates that there is indeed a difference between subtle and blatant indicators of humanness. This could be because while human uniqueness and nature also comprise negative elements (Haslam et al., 2005), humanness as a generalized concept can be seen as overall positive and reflecting a lay understanding of what it means to be a human. Positive agentic and communal traits share a general positive evaluation, and therefore, their correlation and contribution to humanness ratings can be partially driven by the shared valence component (Suitner and Maass, 2008). Accordingly, the strength of blatant dehumanization may depend on seeing entities in reference to all three dimensions. Overall, we think that the results of the presented research are in line with the spirit of recent debates regarding the discriminant validity of dehumanization measures and the way in which dehumanization might differ as a function of how it is conceptualized and measured (e.g., Fincher et al., 2018; Rai et al., 2018).

Finally, for the first time, we also tested whether the model in which agency and communion are predictors of humanness attribution holds across different targets identified by the intersection of gender, sexual orientation, and race. We found that both agency and communion were related to humanness attribution to the same extent across a wide variety of target groups. However, we also found some differences, such that agency (or communion) relates to humanness stronger depending on the target group, signaling that the stereotypical content concerning agency and communion dimensions linked to different groups may drive differently the humanness perception of those groups. This speaks to the importance of theorizing on multiple – and not single – category memberships as they can provide unique outcomes and help to deepen the knowledge on how social categories differ on stereotype content (e.g., Purdie-Vaughns and Eibach, 2008).

In conclusion, we provided empirical evidence that, together with previous findings, accumulates to validate the role of sociability and morality in Haslam's (2006) theoretical model and calls for a better emphasis of the role that agency plays in the model. The current research also points to the importance of using measurement instruments that distinguish predictors from outcome variables. Additionally, we provide evidence for the importance of agency and communion for blatant dehumanization and further evidence of a necessity to distinguish subtle and blatant dehumanization. Providing methodological clarity might ultimately help to capture under which conditions agency and communion matter in humanness conceptualization. Given the urgent need in the field in terms of identifying measure-based dehumanization patterns (Kteily and Landry, 2022), we consider this article a valid contribution to that goal.

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## Authors' contribution

MF developed the general idea and the design of studies 1 and 2. AP carried out studies 1 and 2. MLB developed the idea, the design of, carried out, and wrote the first draft of studies 3 and 4. MF and MLB carried out and described analyses. MF wrote the first draft of the manuscript and all authors provided critical revisions and approved the final version of the manuscript and are listed in an alphabetical order.

The authors declare no conflict of interest.

### Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Magdalena Formanowicz reports financial support was provided by Polish National Science Center. Maria Laura Bettinsoli reports financial support was provided by Polish National Agency For Academic Exchange.

### Data availability

We have shared the link to the data.

### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.cresp.2023.100151](https://doi.org/10.1016/j.cresp.2023.100151).

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