The Humanity Inventory: Developing and Validating an Individual Difference Measure of Dehumanization Propensity

Dorottya Lantos

&

Lasana T. Harris,

University College London

This version of the manuscript was accepted for publication in the Journal of Theoretical Social Psychology in 2021.

Abstract

Dehumanization is often explored in the context of inhumane acts of intergroup and interpersonal violence, and is considered a precursor to extreme atrocities. However, research suggests that we may all engage dehumanized perceptions, at least occasionally, if the social context or goals encourage dehumanization. This implies an individual difference nature of dehumanization propensity. Across four online studies (cross-sectional Studies 1, 3, 4, and longitudinal Study 2), we develop and validate the Humanity Inventory (HumIn), a self-report measure of individual differences in the propensity to engage dehumanization. Study 1 (N = 86) entailed item selection. Study 2 (N = 235) examined the validity of the scale and investigated its test-retest reliability. Study 3 (N = 259) compared the HumIn to pre-existing scales measuring related constructs. Study 4 (N = 98) examined the scale's performance in a situational example of dehumanization. Across all studies, the HumIn performs admirably, showing excellent reliability and validity. This novel instrument and broader conceptualization of dehumanization propensity should allow researchers to tackle questions related to dehumanization from a novel perspective, and will aid future research by providing a tool for assessment.

Keywords: dehumanization, humanitarianism, empathy, theory of mind, social cognition, individual differences, personality

The Humanity Inventory: Developing and Validating an Individual Difference Measure of Dehumanization Propensity

People flexibly engage social cognition—they can infer the mental states of human beings, yet spontaneously fail to consider others' minds (Deroy & Harris, Under review; Harris, 2017). The phenomenon of dehumanization, the failure to spontaneously attribute a mind to another individual, received an increasing amount of attention from social psychologists and social neuroscientists over the past two decades (Harris, 2017). Though theorists suggest that it is associated with interpersonal and intergroup violence and acts as a precursor to violent extremism (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Dojčinović, 2012, 2020; Oberschall, 2006), recent research suggests that individuals may readily engage a dehumanized perception even in less extreme, everyday situations (Bruneau, Szekeres, Kteily, Tropp, & Kende, 2020; Harris, Lee, Capestany, & Cohen, 2014; Kersbergen & Robinson, 2019). Here, we develop an individual difference measure of dehumanization propensity to capture such everyday occurrences.

Researchers have assessed dehumanized perception using a variety of measures (Harris & Fiske, 2009, 2011). Broad descriptions of dehumanization have been characterized by associating humans with animals, objects (e.g., Haslam, 2006), and out-group stereotypes (e.g., Leyens et al., 2001, 2003). Across various measurements, social targets remain ever present as the focal point in experimental paradigms of dehumanization research, and so should they, allowing exploration of the phenomenon in specific contexts (e.g., Kteily et al., 2015). But there may be person-specific predispositions or propensities making them more or less likely to engage dehumanized perception of another social target across social contexts. Despite a growing need for a more universal method of measuring dehumanization

propensity (Hodson, Kteily, & Hoffarth, 2014), researchers primarily examined such individual differences indirectly, measuring empathy, social cognitive ability, social dominance orientation (SDO), and other traits that may correlate with dehumanization across contexts. Here, we ask whether there is an underlying disposition that accounts for dehumanization propensity rather than ability, capturing directly the readiness of a person to engage or disengage social cognition across social targets and contexts.

Dehumanization and Violent Extremism

Since its earliest theoretical mention, dehumanization has been closely associated with the most destructive and inhumane forms of violence, including genocide, mass murder, and other human atrocities. One of the first detailed theoretical analyses of dehumanization linked it to the Holocaust and the My Lai massacre of the Vietnam war, arguing that besides the processes of authorization and routinization, dehumanization is among the key factors enabling sanctioned killings (Kelman, 1973). There is an innate inhibition against the murder of fellow human beings (Cushman, Gray, Gaffey, & Mendes, 2012), yet when dehumanized perception is engaged, such moral principles diminish (Bandura, 1999).

Empirical research has since linked dehumanization to a wide range of hostile behaviors across varying intergroup settings, including the support for harsher retaliatory policies in the context of the Israeli-Palestinian conflict (Maoz & McCauley, 2008); the support for the torture of Muslim war prisoners by Christians (Viki, Osgood, & Phillips, 2013); and reduced levels of empathy in the context of the Bosnian war (Čehajić, Brown, & González, 2009), amongst others. The engagement of dehumanized perception has been observed in broader intergroup settings as well, implicated, amongst others, in prejudice towards ethnic and racial minorities (Castano

& Giner-Sorolla, 2006; Goff, Eberhardt, Williams, & Jackson, 2008); immigrants and refugees (Esses, Veenvliet, Hodson, & Mihic, 2008; Hodson & Costello, 2007).

However, recent research suggests that dehumanizing propaganda may not play a causal role in genocidal violence (Kiper et al., 2019). Kiper and colleagues allocated 242 of Serbian war propagandist and convicted war criminal Vojislav Šešelj's speeches into categories based on their themes, including dehumanization, nationalism, and revenge, among others. Adapting the texts to reference made-up countries ("East Margolia" instead of the in-group "Serbia", "West Margolia" instead of the out-group "Croatia"), they observed that propaganda containing dehumanization of an out-group did not significantly contribute to participants' beliefs about the justification of violence towards the out-group. Such propaganda did contribute to a decrease in out-group empathy. This may be considered as a more implicit form of dehumanization, allowing individuals to ignore the suffering of the out-group more easily.

Alternative theories attempt to account for the underlying mechanisms linking dehumanization to violence and aggression. A recent literature review presented a model bringing these explanations together, highlighting the role of dehumanization in future, present, and past violence (Haslam & Loughnan, 2016). Firstly, through the endorsement of certain out-group stereotypes (Goff et al., 2008), ideologies (e.g., SDO; Esses et al., 2008), and moral disengagement (Bandura, 1999), engaging a dehumanized perception can prepare an individual to enact future harm. Second, the experience of particularly strong, aversive emotions, including disgust and contempt (Harris & Fiske, 2006; Hodson & Costello, 2007); feeling threatened (Viki et al., 2013); or feeling disconnected from others (counterintuitively, often as a result of having one's social connection needs satisfied; Waytz & Epley, 2012) may predispose

individuals to dehumanize others in the present moment. The dehumanization and harm of others is further facilitated by self-dehumanization (Bastian, Jetten, & Radke, 2012; Tang & Harris, 2015). Finally, dehumanization may provide post-hoc justifications for past acts of violence (Castano & Giner-Sorolla, 2006), prolonging conflict by preventing reconciliation (Zebel, Zimmermann, Viki, & Doosje, 2008), and resulting in the dehumanization of the perpetrators by the victims (Bastian & Haslam, 2010).

Everyday Forms of Dehumanization

Despite the violent connotation often associated with dehumanization, it may occur more frequently in everyday settings than early researcher suggested. Social contexts can increase the likelihood of engaging dehumanized perceptions (Harris, 2017). For example, the exposure to crimes of varying severity (e.g., white collar vs. child molestation crimes) induce the dehumanization of the perpetrator accordingly (Bastian, Denson, & Haslam, 2013), while labor markets may promote the dehumanization of people (Harris et al., 2014). Further research suggests that being exposed to targets low on warmth and compassion (e.g., homeless people, drug addicts) disengages social cognition in a way that is visible in neuroimaging data (Harris & Fiske, 2006, 2007). Dehumanization may target obese individuals (Kersbergen & Robinson, 2019) and has been found to influence teachers' perception of children from ethnic minorities (Bruneau et al., 2020). Partisans tend to dehumanize members of the opposing party (Cassese, 2019; Martherus, Martinez, Piff, & Theodoridis, 2019), while dehumanization also drives the objectification of women (Cikara, Eberhardt, & Fiske, 2011; Viki & Abrams, 2003), and may contribute to the stigmatization of mental illness (Boysen, Isaacs, Tretter, & Markowski, 2020).

Under some conditions, however, engaging a dehumanizing perception may prove adaptive. Medical professionals have to distance themselves from their patients in order to provide efficient health care (Cheng, Chen, & Decety, 2017; Haque & Waytz, 2012), and the failure to do so may result in burnout (Delgado, Bonache, Betancort, Morera, & Harris, 2021; Vaes & Muratore, 2013). Such results suggest that dehumanization is not necessarily uniquely reserved for evil – they indicate that, at least occasionally, we may all engage such perceptions. Therefore, there must be a personality trait that captures dehumanization propensity regardless of social context.

Dehumanization Propensity as an Individual Difference

The individual difference nature of dehumanization propensity has been acknowledged by some scholars. For example, researchers indicated the need for "a greater understanding of how and why some people dehumanize more than others" (p. 280, Hodson et al., 2014). Dehumanization has been linked to a number of individual difference variables, most of which are stable across time and assess social cognitive abilities rather than propensities. Personality variables (e.g., extraversion, conscientiousness; Kteily et al., 2015) may influence the likelihood of engaging in dehumanized perception. Further individual difference variables associated with dehumanization include disgust sensitivity (Buckels & Trapnell, 2013; Hodson & Costello, 2007), SDO (Esses et al., 2008; Prati, Moscatelli, Pratto, & Rubini, 2016), right-wing authoritarianism (Maoz & McCauley, 2008), or nationalism (Viki & Calitri, 2008). As the tendency to engage dehumanized perception is predicted by multiple such variables, it is reasonable to assume that a similar stable individual difference may underlie dehumanization propensity. This is additionally supported by data indicating that the dehumanization of outgroup members is already present in childhood (Costello & Hodson, 2014).

Overview of the Experiments

Could there be an underlying propensity for dehumanization, an individual difference variable, stable across time, which predicts the ease with which and the extent to which one is prone to engaging in dehumanization? Current measures of dehumanization fail to answer this question since they assess the dehumanization of a specific target or target group (e.g., Gray et al., 2007; Haslam et al., 2005; Kteily et al., 2015), rather than providing an underlying objective measure free from social context. The purpose of the present research is to develop and validate such an individual difference measure of dehumanization propensity.

We conducted four online studies (cross-sectional Studies 1, 3, 4, and longitudinal Study 2) developing and validating the Humanity Inventory (HumIn), a novel scale measuring dehumanization propensity as an individual difference. Study 1 (N = 86) entailed item selection. Study 2 (N = 235) examined the validity and investigated the test-retest reliability of the scale. Study 3 (N = 259) compared the HumIm to pre-existing scales measuring related constructs. Study 4 (N = 98) examined the scale's performance in a situational example of dehumanization. All studies received ethical approval from the ethics committee of University College London. All datasets, as well as corresponding syntaxes are available via OSF (https://osf.io/xsvct/).

Study 1

Study 1 aimed to identify the items of the HumIn, a measure of dehumanization propensity. We conducted a literature review, identifying variables related to dehumanization: Agency (Gray et al., 2007), attitudes towards animals (Bastian, Loughnan, Haslam, & Radke, 2012), attribution of secondary emotions (Leyens et al., 2001), disgust-sensitivity (Hodson & Costello, 2007), emotion

regulation (Cameron, Harris, & Payne, 2016), empathy and compassion (Čehajić et al., 2009), Machiavellianism (Haslam & Loughnan, 2014), misanthropy (Foster, 2014), morality (Bandura, 1999), narcissism (Locke, 2009), need for closure (Kruglanski, Pierro, Mannetti, & De Grada, 2006), objectification (Cikara et al., 2011), personality traits (Kteily et al., 2015), power (Gwinn, Judd, & Park, 2013), prejudice (Cameron et al., 2016), right-wing authoritarianism (Maoz & McCauley, 2008), social cognition (Waytz, Cacioppo, & Epley, 2010), and SDO (Esses et al., 2008). We included two further variables thought to correspond to dehumanization, but which were not previously related in the literature: self-compassion (due to its relationship with compassion; Davidson, 2007; Neff, 2008), and intelligence (due to studies relating it to social cognition ability; e.g., Dimitrijevic et al., 2013). We obtained previously established scales for each of these variables from the literature (Table 1). We created novel items inspired by these scales (aiming for two items corresponding to each construct), developing the 42-item HumIn scale (Table 2). As an initial validation, we further included the revised Reading the Mind in the Eyes task (RME; Baron-Cohen et al., 2001), a measure of empathy. Empathy is characterized by sharing the emotions of another individual, which can only be achieved when their mental life is taken into consideration (Singer & Klimecki, 2014). We thus expected a negative relationship between dehumanization propensity and empathy.

Table 1

Table 2

Method

Participants

According to the minimum necessary sample size of 100 suggested by (Gorusch, 1983), we recruited 101 participants through the SONA Participation Scheme at the University (name removed for blind review) for partial course credits; through social media; and through the callforparticipants.com website. Due to incomplete surveys or incorrect responses on an attention-check question, we included the data of 86 participants, resulting 78 females, 7 males, ages 18-65, M = 21.88, SD = 7.14, (N.B. demographic data of one participant were missing) in the analyses.

Measures and Procedure

Participants completed an online survey created with Qualtrics software. The scales were presented in the order listed below.

The HumIn was administered with all 42 initial items displayed in a randomized order for each participant. Participants responded on a 7-point Likert-scale (1 = *strongly disagree*, 7 = *strongly agree*), M = 4.17, SD = 0.29, α = .43.

Empathy was measured with the 36-item revised RME test (Baron-Cohen et al., 2001). In this test, participants were presented with 36 pictures of eyes cropped out from black-and-white photographs, and asked to decide which emotion is conveyed by the gaze out of four options. Each correct response was scored 1 and participants' scores were summed to create their index, with higher scores reflecting greater empathy, M = 26.86, SD = 4.44. One participant did not complete this measure.

Results and Discussion

We conducted an exploratory principal component analysis (PCA) with varimax rotation to identify factors within the initial HumIn. We explored various

approaches to determine the number of factors to be extracted (details about the Scree plot, Eigenvalues, parallel analysis, and Velicer's MAP test are presented in the Supplementary Materials). We based factor extraction on Eigenvalues greater than 1. We used the criterion level of .50 to determine whether an item loaded onto a factor. At each step of the PCA we also conducted a reliability analysis. We explored the outputs of both analyses simultaneously, making informed decisions about variables to exclude.

We excluded 34 items. Our reasons for exclusion were items not loading onto any factors (n = 15), item loadings below our criterion of .50 (n = 11), items decreasing Cronbach's α by over .02 (n = 7), and items decreasing KMO by over .045 (n = 1). The final scale comprised only one factor (a step-by-step breakdown of item selection is detailed in the Supplementary Materials, Table 3 presents the list of final items, their factor loadings and communalities, Table 4 presents item analysis, and Table 5 presents response frequencies). Although items loading under the criterion level of .50 have been excluded from the final scale, Item 23 with a loading of .48 was included as its exclusion reduced scale reliability (α = .714 with Item 23; α = .702 without).[1]

Table 3

Table 4

Table 5

A Cronbach's α of .714 suggests a reliable scale (Kline, 1999). The corrected item-total correlations are all above .30, suggesting that each item correlates with the total scale, further supporting its reliability (Field, 2009). The PCA revealed a KMO

of .659, suggesting an adequate sample size. Bartlett's test of sphericity, $\chi^2(28) = 125.46$, $p < .001$, indicated that correlations between the items were sufficient for PCA. The analyses revealed that three components had eigenvalues higher than Kaiser's criterion of 1; 2.75, 1.12, and 1.06. The differences between the highest eigenvalue and the others, along the convergence of the scree plot justified retaining one component.

Looking at the retained items of the HumIn, they suggest a scale which indicates humanitarianism. Thus, we propose that lower scores on the scale indicate increased dehumanization propensity. In order to conduct an initial validation on the 8-item HumIn, we averaged participants' scores ($M = 4.87$, $SD = .74$) and conducted bivariate correlations between these and the RME scores. The results indicated a significant correlation, $r(83) = .27$, $p = .01$, 95% CI [.10, .42], using 1,000 bootstrapped samples. This relationship suggests that the 8-item HumIn is related to empathy, in line with our predictions.

The low sample size should be noted as a limitation of the present study. Although the final sample consisted of fewer participants than our initial aim, the validity of using rules of thumb when determining the required sample size for principal component analysis has been challenged, with calculations suggesting no true mathematical basis for such numbers (e.g., MacCallum et al., 1999). Other properties of the analysis must also be taken into account. Preacher and MacCallum (2002) argue that smaller sample sizes may provide sufficient power as long as only a small number of factors are retained in the final solution, and as long as the communalities corresponding to the final items are high. In the present case, the final solution consisted of only one factor, and five out of the eight items corresponded to communalities above .6, meeting these criteria (see Table 3). Thompson (2004)

further suggests that small sample sizes provide enough power in analyses where factors are defined by at least four measured variables with structure coefficients less than .60. In this case, both of these criteria are met in the final extraction. A Kaiser-Meyer-Olkin Measure of Sampling Adequacy of .66 also suggests an adequately large sample size. Furthermore, this sample was made up of university students, and was predominantly made up of females. For these reasons, the validity and reliability of the scale must be investigated in different samples in order to assess its generalizability, which we describe next.

Study 2a

Study 2a explored the validity of the 8-item HI by correlating it to five variables linked to dehumanization: empathy, need for cognition, SDO, disgust sensitivity, and cognitive task switching. We predicted that empathy, need for cognition, and disgust sensitivity would be inversely related to dehumanization propensity, and that SDO would be positively related to dehumanization propensity. Dehumanized perception results from flexible social cognition (Deroy & Harris, Under review; Harris, 2017), and those with an increased dehumanization propensity may readily switch between engaging and disengaging social cognition (Kiesel et al., 2010). We thus further predicted that cognitive task switching ability would correlate positively with dehumanization propensity. We anticipated better performance on the Stroop task (i.e., lower reaction times) to be associated with lower scores on the HumIn (i.e., with greater dehumanization propensity).

Method

Participants

We conducted power analyses using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007) to determine the sample size

necessary to achieve power = .80, with α = .05, using the correlation coefficient from Study 1 between HumIn scores and RME scores, r = .27, for a bivariate correlation. We relied on this effect size as Study 2 aimed to identify similar relationships. The analysis yielded a minimum necessary sample of 83 participants. We conservatively oversampled, ending data collection on a predetermined date.

We recruited 258 participants through the SONA participation scheme for partial course credits (n = 32), through Amazon M-Turk (n = 169), and through social media for the chance to win one Amazon voucher worth £50 (n = 57).[2] We only included the data of 235 participants (137 females, 92 males, with one participant not disclosing their gender, and the data of five participants missing, ages 18-83, M = 34.20, SD = 13.52) due to incorrect responses on an attention-check question.

Materials and Procedure

We created an online survey using Qualtrics software, including the following scales in the following order.

Dehumanization propensity was assessed with the HumIn, presented as in Table 3. Participants responded on a 7-point Likert-scale (1 = *strongly disagree*, 7 = *strongly agree*). We calculated participants' mean scores to create an index score, where higher values indicated lower dehumanization propensity, M = 5.02, SD = 0.89, α = .76.

Empathy was measured using two separate assessments. The RME (Baron-Cohen et al., 2001) was presented as in Study 1, M = 26.00, SD = 5.79. Here, we additionally included the 40-item empathy quotient, a survey-type measure of empathy, to generalize beyond the RME (e.g., *I really enjoy caring for other people*; Baron-Cohen & Wheelwright, 2004). Participants responded on a 4-point scale (1 = *strongly disagree*, 4 = *strongly agree*). Of the four response options, two were always

scored as 0, one as 1, and one as 2, where higher values always indicated greater empathy, as specified in the scoring guidelines. We summed participants' scores to create an index score, where higher scores indicated greater empathy, $M = 39.60$, $SD = 12.78$, $\alpha = .90$.

Need for cognition was measured with the 18-item revised need for cognition scale (e.g., *Thinking is not my idea of fun;* Cacioppo et al., 1984). Participants responded on a 9-point Likert-scale (1 = *very strongly disagree*, 9 = *very strongly agree*). We calculated participants' mean scores to create an index score, where higher scores indicated greater need for cognition, $M = 5.72$, $SD = 1.43$, $\alpha = .93$.

SDO was assessed using the 16-item social dominance orientation scale (e.g., *No one group should dominate society;* Pratto et al., 1994) on a 7-point Likert-scale (1 = *strongly disagree*, 7 = *strongly agree*). We calculated participants' mean scores to create an index score, where higher scores indicated greater SDO, $M = 2.74$, $SD = 1.32$, $\alpha = .95$. Three participants did not complete this measure.

Disgust sensitivity was assessed with the 25-item revised disgust sensitivity scale (Olatunji et al., 2007; $M = 14.11$, $SD = 4.62$, $\alpha = .82$) composed of three subscales: core disgust, characterized by the sense of offensiveness along the threat of disease (e.g., *It would bother me to see a rat run across my path in the park*), $M = 7.56$, $SD = 2.31$, $\alpha = .68$; animal reminder disgust, disgust towards stimuli that may remind one of humans' animalistic traits (e.g., *Seeing a cockroach in someone else's house doesn't bother me*), $M = 4.52$, $SD = 2.17$, $\alpha = .75$; and contamination-based disgust, disgust related to the perceived threat of contagion (e.g., *It would bother me tremendously to touch a dead body*), $M = 2.03$, $SD = 1.29$, $\alpha = .57$). Half of the scale includes items that prompt participants to respond with *true* (coded 1) or *false* (coded 0), whilst some prompt them to evaluate statements using the response options *not*

disgusting (coded 0), *slightly disgusting* (coded 0.5), *very disgusting* (coded 1). Participants scores were summed to create index scores, where higher numbers reflect greater disgust sensitivity. Four participants did not complete this measure.

Cognitive task switching was assessed using the Stroop task (Stroop, 1935). Participants completed 20 trials, where we measured their accuracy and reaction time (RT). Due to a ceiling effects in accuracy scores (*M* correct responses 18.44 out of 20, *SD* = 2.58), we relied on participants' RTs, where lower values indicated greater cognitive task switching ability (*M* = 3.37s, *SD* = 1.61s, range 1.04s – 14.99s).

Participants completed this survey online. It is thus possible that some participants paused (to grab a drink, respond to a text message, etc.), as suggested by the large RT range that does not correspond well with the mean RT. We thus excluded the data of participants whose mean RT was at least 3 *SD* above the average from all analyses incorporating this measure (*N* = 227 participants; *M* = 3.22s, *SD* = 1.09s, skewness = 1.41, *SE* = .16, kurtosis = 3.25, *SE* = .32).We finally log(10) transformed scores in order to improve skewness and kurtosis (*M* = 0.49, *SD* = 0.14, skew = 0.17, *SE* = .16, kurtosis = 0.73, *SE* = .32). Four participants did not complete this measure.

Results and Discussion

Bivariate correlations indicated significant positive relationships between scores on the HumIn and empathy (operationalized as the empathy quotient), need for cognition, and one subscale of disgust sensitivity. This suggests a negative relationship between these variables and dehumanization propensity. We also observed that scores on the HumIn were positively related to longer RTs on the Stroop task, indicative of a positive relationship between dehumanization propensity and cognitive task switching. We further observed a negative correlation between scores on the HumIn and SDO, indicating a positive relationship between

dehumanization propensity and SDO. Correlations and confidence intervals are presented in Table 6. These results are in line with our expectations and support the construct validity of the HumIn in a novel, more diverse sample than that employed in Study 1.

Table 6

Contrary to our expectations, we did not observe a relationship between dehumanization propensity and empathy, assessed using the RME task (Baron-Cohen et al., 2001). We opted for using this measure of empathy in Studies 1 and 2 as it requires participants to infer the mental states of individuals depicted on photographs. This task, whilst useful across clinical populations, has been criticized when used among the general population, as it may be too easy, thus failing to discriminate among individuals (Black, 2019). Additionally, our sample was comprised of participants from diverse ethnic backgrounds (66% White or White British; 21.3% Asian or Asian British; 3.8% Mixed; 3.4% Black or Black British; 3.4% Other, data of 5 participants missing), whilst the employed version of the RME task only included images of eyes cropped out of Caucasian faces. Thus, the task may not be valid in the present sample. Moreover, some observed that the task has low internal reliability (Khorashad et al., 2015; Vellante et al., 2013), and even a negative correlation between the task and other measures of cognitive empathy (Spreng, McKinnon, Mar, & Levine, 2009). Empathy as measured by the empathy quotient (Baron-Cohen & Wheelwright, 2004) is thus a more reliable indicator of the concept, suggesting that our a priori predictions were met despite the lack of an observed relationship between dehumanization propensity and performance on the RME task.

We furthermore observed a significant relationship between dehumanization propensity and only one facet of disgust sensitivity: disgust concerning animal reminders. Previous research related disgust sensitivity to dehumanization, and suggests that targets who are perceived as disgusting are often dehumanized (Harris & Fiske, 2006; Hodson et al., 2014; Sherman & Haidt, 2011). Yet the majority of such research considered only animalistic forms of dehumanization, i.e., likening targets/target groups to animals and perceiving them as not possessing uniquely human qualities such as self-awareness (Buckels & Trapnell, 2013; Dalsklev & Kunst, 2015; Haslam, 2006; Hodson & Costello, 2007). Research that aimed to separate the relationship between disgust and the animalistic and mechanistic forms of dehumanization, i.e., likening targets/target groups to machines, perceiving them as lacking characteristics of human nature such as warmth (Haslam, 2006), found that it was only significantly related to the animalistic form, as well as to the denial of humanity, but not to mechanistic dehumanization (Giner-Sorolla & Russell, 2019).

These findings along the present ones indicate that disgust may be most strongly related to an animalistic form of dehumanization. The animal reminder subscale of the disgust sensitivity scale indicates the extent to which one is disgusted by parts of human nature (e.g., sexuality, death) that are similar to animal behavior (Olatunji et al., 2007; Rozin, Haidt, & McCauley, 2008; Sherman & Haidt, 2011). This type of disgust may be elicited by outgroup members, whose behavior during everyday routines, including personal hygiene, diet, and sexual behavior, may differ from that of the in-group, potentially creating a sense that the out-group is more alike to animals then humans. The disgust reaction potentially evolved to help our ancestors avoid contamination from out-groups, who may have carried unwanted diseases

resulting exactly from such different behaviors, including hygiene practices, diet, and sexual behavior (Curtis, de Barra, & Aunger, 2011; Rozin et al., 2008).

It should further be noted that interpersonal disgust sensitivity seems to be especially closely related to dehumanization (Hodson & Costello, 2007). Thus, we may assume it is also related to dehumanization propensity. The scale employed here to assess disgust sensitivity did not specifically account for interpersonal disgust sensitivity. We recommend that future research investigates the relationship between the HumIn and interpersonal disgust sensitivity.

Study 2b

Study 2b aimed to establish the test-retest reliability of the HumIn.

Method

Participants

We used G*Power (Faul et al., 2009, 2007) to determine the sample size necessary for power = .80, with $\alpha = .05$. Calculations were based on the correlation coefficient of $r = .5$, expecting a large effect size. The analysis, conducted for bivariate correlations, yielded a required sample of 23 participants.

All participants who took part in Study 2a had the opportunity to provide their e-mail addresses voluntarily to be contacted for follow up research. Twenty-nine of these participants from Study 2a agreed to complete Study 2b, approximately 1 month later. Two of these participants' responses were filtered out from the first wave of the study due to incorrect responses on an attention check measure (leaving these participants' data in the analyses did not change the pattern of results). Thus, the final sample was made up of 27 participants (22 females, 5 males, ages 18-76, $M = 29.48$, $SD = 14.90$).

Materials and Procedure

In an online survey created with Qualtrics software participants completed the HumIn, $M = 4.99$, $SD = 0.86$, $\alpha = .75$, presented as in Study 2a.

Results and Discussion

We ran a bivariate correlation to explore the relationship between participants' HumIn scores obtained at two different times. The analysis revealed a significant correlation, $r(25) = .85$, $p < .001$, 95% CI [.73, .92] with 1,000 bootstrap samples. These results suggest that the dehumanization propensity assessed by the HumIn is stable within individuals across the timescale of one month. Only a small proportion of the participants who completed Study 2a were willing to participate in this follow up survey, and thus these results should be treated as a preliminary. Future replication of these results is warranted.

Study 3

Study 2 supported the validity of the HumIn. But does the HumIn predict dehumanization propensity over and above other existing scales? Moral disengagement has been implicated in a range of inhumane acts, including dehumanization (Bandura et al., 1996). The final items of the HumIn suggest a scale which, besides indicating greater flexibility in engaging social cognition (low scores), also allows inferences of humanitarianism. To test whether the HumIn goes beyond the assessment of general humanitarianism and yields a reliable measure of dehumanization propensity, we compared the HumIn to previously established measures of both moral disengagement and humanitarianism.

We explored the predictive validity of these scales on assessments of infrahumanization, dehumanization, and cognitive task switching in a US sample. We assessed the infrahumanization of an outgroup prone to being dehumanized by Americans, Mexicans (vs. the infrahumanization of the ingroup, Americans, as a

control, Kteily & Bruneau, 2017). We anticipated individuals high in dehumanization propensity to engage in greater levels of infrahumanization towards the outgroup, but not the ingroup. Dehumanization was assessed based on the notion that individuals process faces differently when focusing on specific features. Participants respond faster to questions about eye color when it indicates light captured by the retina vs. a personality trait (van Dillen, Harris, van Dijk, & Rotteveel, 2015). While people can make external inferences simply by looking at a face, they must make inferences about internal dispositions by engaging social cognition. This requires cognitive processing beyond simply acknowledging eye color. Participants who have a propensity to more swiftly switch between dehumanizing and humanizing cognitions should be quicker at indicating the targets' personalities, whereas they should not differ in their reaction times to indicating the targets' eye color compared to participants low in dehumanization propensity. Finally, as in Study 2, we anticipated that those high in dehumanization propensity would be better at cognitive task switching due to increased experiences of easily switching between dehumanizing and humanizing perceptions.

Method

Participants

We used SPSS version 27 to determine the sample size necessary to achieve power = .80, with $\alpha = .05$. We based the calculations anticipating a medium correlation coefficient, $r = .30$, and conducted the analysis for a linear regression. We specified 4 total and test predictors. The analysis yielded a minimum sample of 126 participants. We conservatively oversampled, ending data collection on a predetermined date.

Two hundred fifty-nine participants (142 female, 116 male, one participant not disclosing their gender; ages 21-71, M = 36.91, SD = 12.30) completed the study via Amazon M-Turk. We recruited U.S. citizens, as one measure tested cultural knowledge native to that country.

Materials and Procedure

We created an online survey using Qualtrics software. We presented the measures of dehumanization propensity, humanitarianism, and moral disengagement in a randomized order. Otherwise, the tasks were presented in the following order.

Dehumanization propensity was assessed using the 8-item HumIn, presented as in Study 2, M = 5.13, SD = 0.87, α = .76. Study 1 indicated the possibility that retaining an additional item might create a stronger scale (see Supplementary Materials). To explore this, we further included the item *"It is easy to get inside of other people's head"* at the end of the same questionnaire, M = 4.99, SD = 0.76, α = .74 (for the 9-item HumIn).

Humanitarianism was assessed using two independent measures. The identification with all humanity scale consists of items such as *"How much do you identify with (that is, feel a part of, feel love toward, have concern for) each of the following?"* (McFarland, Webb, & Brown, 2012). Participants responded to each of the nine question on 5-point Likert-scales corresponding to *a) People in my community; b) Americans; c) People all over the world.* Participants' responses on the 'c' questions (always relating to people all over the world) were averaged to create their index score, where higher scores indicated greater identification with humanity, M = 3.07, SD = 0.80, α = .90.

The 10-item humanitarianism-egalitarianism scale was included as an additional measure of humanitarianism (Katz & Hass, 1988). It was assessed on a 6-

point Likert-scale (1 = *strongly disagree,* 6 = *strongly agree;* e.g., *One should be kind to all people*). We averaged participants' responses to create an index score where higher values indicated greater humanitarianism, $M = 4.71$, $SD = 0.82$, $\alpha = .91$.

Moral disengagement was assessed using the 32-item mechanisms of moral disengagement scale (Bandura et al., 1996). We revised the items of the scale presented in the original publication to ensure that they fit with our sample, rephrasing the items focusing on children to be suitable for adults. We changed items such as *"a kid in a gang should not be blamed for the trouble the gang causes"* to *"a person in a gang should not be blamed for the trouble the gang causes".* Participants responded to each item on a 3-point Likert-scale (1 = *agree,* 3 = *disagree*). We averaged participants' responses to create an index score where higher values indicate lower moral disengagement, $M = 2.59$, $SD = 0.41$, $\alpha = .96$.

Infrahumanization was measured with an index based on 65 emotions pre-tested on valence and human uniqueness (Demoulin et al., 2004). We took five positive and five negative emotions from the 20 emotions rated as least uniquely human, and from the 20 rated as most uniquely human (see Supplementary Materials). Participants completed two scales, both containing the same 10 emotions in a randomized order, while thinking of the typical American or Mexican person. They indicated on a 6-point scale (1 = *not capable at all*, 6 = *very capable*) how capable the target is of experiencing each emotion. We summed participants' responses on the primary and secondary emotions relating to Americans, and those relating to Mexicans. We subtracted the summed secondary emotions from the summed primary emotions creating an index representing the infrahumanization of Americans ($M = 0.33$, $SD = 2.86$) and Mexicans ($M = 0.54$, $SD = 2.33$).

Dehumanization was assessed using 20 faces from the Chicago Face Database (Ma, Correll, & Wittenbrink, 2015), including five Black female, five White female, five Black male, and five White male faces. The faces in each category contained a neutral, an angry, a fearful, and two happy (open/closed mouthed) facial expressions. Each photograph was presented along with a question either asking about their appearance (*"This person has a) blue eyes; b) brown eyes"*) or personality (*"This person is an a) extravert; b) introvert"*). The statement corresponding to the photo, and the order of the photos were randomized.

We measured RT during the experiment (*M* = 4.89s, *SD* = 3.60s, range 0.74s - 46.44s). We calculated mean RTs on questions regarding appearance (*M* = 4.72s, *SD* = 3.20s, range 0.98s – 25.64s) and personality (*M* = 5.27s, *SD* = 6.14s, range 0.60s – 85.06s). Participants were completing this survey online. It is thus possible that some participants paused (to grab a drink, respond to a text message, etc.), as suggested by the large RT ranges that do not correspond well with the mean RTs. We thus excluded the data of participants whose mean RT was at least 3 *SD* above the average from all analyses incorporating this measure (*N* = 253 participants; overall RT: *M* = 4.55s, *SD* = 2.16s, range 0.74s – 13.10s; appearance RT: *M* = 4.49s, *SD* = 2.34s, range 0.98s – 14.12s, skewness = 1.66, *SE* = .15, kurtosis = 3.26, *SE* = .31; personality: *M* = 4.70s, *SD* = 2.62s, range 0.60s – 19.77s, skewness = 1.96, *SE* = .15, kurtosis = 5.43, *SE* = .31). In order to correct for high skewness and kurtosis, we next applied a log(10) transformation to these values (appearance RT: *M* = .60, *SD* = .20, skewness = .29, *SE* = .15, kurtosis = .11, *SE* = .31; personality RT: *M* .62, *SD* = .21, skewness = .19, *SE* = .15, kurtosis = .82, *SE* = .31).

Cognitive task switching was measured using a Stroop task (Stroop, 1935), identical to that used in Study 2. Participants showed a ceiling effect with their

accuracy on the task (*M* correct responses = 18.42 out of 20, *SD* = 2.25), we thus relied on their RTs (*M* = 3.35s, *SD* = 1.62s). To stay consistent with the analyses of Study 2, we removed scores that were at least 3 *SD* greater than the mean and log(10) transformed them (*N* = 252, *M* = 0.47, *SD* = 0.16).

Results and Discussion

Bivariate correlations indicated that dehumanization propensity assessed with the HumIn was negatively associated with humanitarianism, as assessed by two independent measures, and positively with moral disengagement and mental task switching. It was further associated positively with the infrahumanization of Mexicans (but not Americans) and faster reaction times on judging individuals' personality and eye color based on photographs (Table 7).

Table 7

We ran five linear regressions entering dehumanization propensity, humanitarianism (assessed using two independent measures), and moral disengagement as predictors in each analysis to compare how well these scales predict the outcome variables (Table 8). We entered the infrahumanization of Mexicans, the infrahumanization of Americans, the speed of judging targets' personality based on photographs, the speed of judging targets' appearance based on photographs, and cognitive task switching as the outcome measures. The HumIn was the only significant negative predictor or the infrahumanization of Mexicans, indicating that dehumanization propensity was positively associated with the infrahumanization of the outgroup. When entering the infrahumanization of the ingroup as the outcome, however, the overall regression analysis was nonsignificant, $F(4,254) = 1.96$, $p = .10$.

The HumIn was further the only positive predictor of RTs whilst judging personality, but not appearance, based on photographs. In line with the predictions, this indicates that those with greater cognitive flexibility towards humanizing and dehumanizing individuals are quicker with assessing personality, a task that requires one to 'get inside the mind' of their target (e.g., Harris & Fiske, 2007; van Dillen et al., 2015) As expected, no such association was found between dehumanization propensity and the speed of responding to questions appearance (generic eye-color).

According to the predictions, dehumanization propensity was also the strongest predictor of cognitive task-switching. Moral disengagement and one of the humanitarianism scales also were significant, although weaker predictors. Importantly, dehumanization propensity assessed with the HumIn was positively related to increased cognitive task-switching (shorter RTs). Humanitarianism was, on the other hand, related to cognitive task-switching in the opposite way, with greater humanitarianism related to increased cognitive task-switching abilities. This finding shows that the HumIn is not simply a measure of humanitarianism, but that it taps into the assessment of a different variable. These findings overall support the predictions.

Table 8

We also ran the same linear regression analyses with the 9-item version of the HumIn (detailed in the Supplementary Materials) instead of the 8-item version. The analyses revealed the same pattern as those presented here (the syntax and data can be found on OSF), with the exception that the 9-item HI also significantly predicted RTs to appearance judgement, not only personality judgment, though the relationship was weaker. The results relating to the 8-item HumIn were fully in line with the

predictions based on theory. Additionally, it showed stronger reliability than the 9-item version. These results indicate that our choice of retaining only 8-items for the final version of the HumIn is justified.

Study 4

Study 4 aimed to gather empirical evidence regarding the validity of the HumIn. We chose a method previously shown by experimental research to capture situational dehumanized perception specific to a target (Harris & Fiske, 2011), and correlated performance on this task with responses on the HumIn as a trait measure of dehumanization propensity. Targets stereotypically rated low on warmth and low on competence, such as homeless targets or drug addicts, tend to be dehumanized (Fiske, Cuddy, Glick, & Xu, 2002; Harris & Fiske, 2006, 2007). In the first task of the experiment, participants described a day in the life of a homeless target. We measured the extent to which participants dehumanized the target based on the verbs used in their descriptions (Semin & Fiedler, 1988). In the second task, participants rated the same target on traits predicting dehumanized perception.

Method

Participants

We used G*Power (Faul et al., 2009, 2007) to determine the sample size necessary to achieve power = .80 with $\alpha = .05$, basing the calculations on the correlation coefficient observed between HI and EQ scores, $r = .47$ in Study 2a. The analysis yielded a minimum sample of 26 participants. Data collection ended on a predetermined date.

We recruited 99 U.S. citizens through Amazon M-Turk. The data of one participant was excluded from the analysis due to misunderstanding a task (37 females, 61 males, ages 18-64, $M = 33.26$, $SD = 10.65$).

Materials and Procedure

We created an online survey using Qualtrics software.

The HumIn was presented as in Study 2, α = .79.

Dehumanization was measured across two tasks (Harris & Fiske, 2011). Participants were asked to describe a day in the life of a homeless man shown on a photograph (stimulus from Harris & Fiske, 2011). Written responses were coded by two independent raters, counting the total adjectives, mental state verbs (MSV), interpretive action verbs (IAV), and descriptive action verbs (DAV) used in each response (Semin & Fiedler, 1988). This approach stems from the observation that the words one uses reflects their cognitions, and the words belonging to these categories refer to different levels of abstraction. Adjectives refer to qualities or properties of individuals, can be distinguished from psychological states, and represent the most abstract category (e.g., lazy). This category is followed by MSVs, referring to verbs representing the internal or mental states of an individual. These cannot be observed, rather only inferred through mentalisation (e.g., like). IAVs are used to interpret others' actions – these, also, cannot simply be observed, but we must infer them, though they do not require social cognition (e.g., help). DAVs represent the most concrete category, and are verbs used to simply describe the actions of others (e.g., sit). To eliminate subjectivity, we averaged the totals of both raters. We computed percentages based on the total number of words in each response (see Table 8 for means and standard deviations).

In the second task, participants were asked to rate the same target on the following items: warmth, competence, similarity, familiarity, ease of mind attribution, ease of inferring their disposition, intelligence, and articulateness, using a 7-point

Likert-scale (1 = *very untrue*, 7 = *very true*). We averaged participants' responses in a way that higher scores indicated lower dehumanization, $\alpha = .84$.

Results and Discussion

Bivariate correlations revealed that dehumanization propensity was related to a decreased use of mental state verbs and an increased use of descriptive action verbs when describing the homeless target (Table 9). It was additionally positively associated with dehumanization of the homeless target as indicated by participants' scores on the dehumanization scale. These results are in line with the predictions. While Study 2 demonstrated that the HumIn predicts individual difference variables related to dehumanization, these results indicate that it further accurately predicts dehumanization in a context influenced by social factors.

Table 9

General Discussion

The present studies introduce the development and validation of a scale measuring dehumanization propensity as an individual difference variable. Study 1 described the development of the HumIn. The results of the PCA suggest a scale which indicates how humanitarian an individual perceives themselves to be, with lower scores indicating greater dehumanization propensity. Study 2 validated the HumIn, correlating it to individual difference variables related to dehumanization and social cognition, and ensured test-retest reliability. Study 3 demonstrated that the HumIn was a better predictor of dehumanization and cognitive flexibility than other related measures. It also distinguished the HumIn from other scales related to humanitarianism, despite significant positive correlations observed between the

HumIn and such scales. Study 4 described a further validation using a previously established situational measure of dehumanization. Together, these studies support the existence of an individual difference variable underlying dehumanization propensity, which may indicate the extent to which and the ease with which individuals engage a dehumanized perception in their everyday lives.

Dehumanization seems to be associated with all forms of intergroup conflict, from the endorsement of out-group stereotypes (Goff et al., 2008) to mass murder and genocide (Kelman, 1973). The conceptualization of dehumanization propensity presented here will allow researchers to investigate this important phenomenon from a novel perspective, and provide a tool to explore research questions that were previously impossible to operationalize. For example, do people with varying levels of dehumanization propensity respond equally strongly to situational factors which may promote the engagement of a dehumanized perception? Or are there such situational factors which only affect those high in this propensity?

Remarkably, this scale may be used to target past, present, or future harm. Dehumanization has been suggested to play a key role in each of these through different mechanism (Haslam & Loughnan, 2016). A more thorough understanding of dehumanization and the personality especially prone to dehumanization will foster the cumulation of knowledge aimed at preventing intergroup hostility and conflict and aiding reconciliation efforts among groups.

The present studies are not without flaws. The studies presented here rely predominantly on samples from the US and UK, thus we cannot make any inferences about the cross-cultural generalizability of these results with certainty. While it is reasonable to assume that dehumanization propensity is universally present across cultures, it would be desirable to replicate these findings in further cultural settings.

We employed culturally relevant target outgroups in Studies 3 and 4. Future research should investigate whether the present results replicate on alternative culturally relevant outgroups in samples recruited from similar cultural backgrounds. Additionally, this should be investigated on samples recruited from distinct cultural backgrounds, with corresponding culturally relevant target outgroups. We urge future research to examine the potential influence of further variables, including whether the outgroup belongs to a minority or majority, whether there is any historical or currently ongoing conflict between the in- and outgroups, and how strongly one identifies with their ingroup.

Moreover, we have developed a self-report scale, which assumes that people have conscious access to psychological processes that govern dehumanization propensity. This assumption has not been tested. Finally, we assessed the scale only on month apart in order to examine the test-retest reliability. While the results suggest exceptional stability, future research should aim to replicate this finding across longer time periods.

These studies support the reliability and validity of the HumIn. They provide strong empirical evidence suggesting that dehumanization is not a phenomenon exhibited only by those capable of extreme violence. It is also not a phenomenon only affected by or appearing in response to situations or contexts. Instead, it seems like we all have the propensity to dehumanize–the differences lie in the ease with which and the extent to which this dehumanization occurs, indicated by flexible social cognition, indexed by the HumIn.

Endnotes

1. We discovered post-hoc an error where we failed to reverse code the appropriate items. While we acknowledge that the item selection for the scale was not conducted in an ideal way, the latter studies reported here nevertheless suggest that the Humanity Inventory, with the selected items, is a valid and reliably measure of dehumanization propensity. We did uncover another possible 9-item version of the scale, detailed in the Supplementary Materials. We tested this alternative scale in Study 3, with results supporting the use of the 8-item HumIn.
2. One-way ANOVAs revealed that scores on the HumIn, $F(2, 232) = 4.05$, $p = .02$, empathy quotient, $F(2, 232) = 3.21$, $p = .04$, animal reminder disgust, $F(2, 228) = 4.09$, $p = .02$, and contamination-based disgust subscales of the disgust sensitivity scale, $F(2, 228) = 4.58$, $p = .01$, differed significantly across the participants recruited using different strategies. No such differences were observed on need for cognition, $F(2, 232) = 1.13$, $p = .33$, Reading the Mind in the Eyes, $F(2, 232) = 0.93$, $p = .40$, overall disgust sensitivity, $F(2, 228) = 2.56$, $p = .08$, core disgust subscale of the disgust sensitivity scale, $F(2, 228) = 0.36$, $p = .70$, social dominance orientation scores, $F(2, 229) = 1.31$, $p = .27$, or on the RTs of the Stroop task, $F(2, 224) = 1.05$, $p = 0.35$. The final sample consisted of 160 participants recruited via MTurk, 47 participants recruited via social media, and 28 participants recruited via the SONA participation scheme. The differences across the recruitment groups revealed by the ANOVAs are likely due to insufficient power achieved in two out of the three groups, given the a priori power analysis suggested a minimum necessary sample of $N = 83$ to test our hypotheses. Indeed, when including only the

group recruited via MTurk in the analyses related to the hypotheses, the pattern of results matched that of the overall sample. For the sake of transparency, we report the correlations observed within each recruitment group separately in the Supplementary Materials.

Declaration of Conflicting Interests:

The Authors declare no conflict of interest.

Open Data Statement:

All data and corresponding syntaxes are publicly available via OSF (link currently omitted due to blind review).

References

Altemeyer, B. (1996). *The authoritarian specter*. Cambridge, Mass: Harvard University Press.

Ames, D. R., Rose, P., & Anderson, C. P. (2006). The NPI-16 as a short measure of narcissism. *Journal of Research in Personality*, *40*(4), 440–450. https://doi.org/10.1016/j.jrp.2005.03.002

Anderson, C., John, O. P., & Keltner, D. (2012). The Personal Sense of Power: The Personal Sense of Power. *Journal of Personality*, *80*(2), 313–344. https://doi.org/10.1111/j.1467-6494.2011.00734.x

Bandura, A. (1999). Moral Disengagement in the Perpetration of Inhumanities. *Personality and Social Psychology Review*, *3*(3), 193–209. https://doi.org/10.1207/s15327957pspr0303_3

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency. *Journal of Personality and Social Psychology*, *71*(2), 364–374. https://doi.org/10.1037/0022-3514.71.2.364

Baron-Cohen, S., & Wheelwright, S. (2004). The Empathy Quotient: An Investigation of Adults with Asperger Syndrome or High Functioning Autism, and Normal Sex Differences. *Journal of Autism and Developmental Disorders*, *34*(2), 163–175. https://doi.org/10.1023/B:JADD.0000022607.19833.00

Baron-Cohen, S., Wheelwright, S., Hill, J., Raste, Y., & Plumb, I. (2001). The "Reading the Mind in the Eyes" Test Revised Version: A Study with Normal Adults, and Adults with Asperger Syndrome or High-functioning Autism. *Journal of Child Psychology and Psychiatry*, *42*(2), 241–251. https://doi.org/10.1111/1469-7610.00715

Bastian, B., Denson, T. F., & Haslam, N. (2013). The Roles of Dehumanization and Moral Outrage in Retributive Justice. *PLoS ONE*, *8*(4), e61842. https://doi.org/10.1371/journal.pone.0061842

Bastian, B., & Haslam, N. (2010). Excluded from humanity: The dehumanizing effects of social ostracism. *Journal of Experimental Social Psychology*, *46*(1), 107–113. https://doi.org/10.1016/j.jesp.2009.06.022

Bastian, B., Jetten, J., & Radke, H. R. M. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, *48*(2), 486–491. https://doi.org/10.1016/j.jesp.2011.10.009

Bastian, B., Loughnan, S., Haslam, N., & Radke, H. R. M. (2012). Don't Mind Meat? The Denial of Mind to Animals Used for Human Consumption. *Personality and Social Psychology Bulletin*, *38*(2), 247–256. https://doi.org/10.1177/0146167211424291

Bilewicz, M., Imhoff, R., & Drogosz, M. (2011). The humanity of what we eat: Conceptions of human uniqueness among vegetarians and omnivores. *European Journal of Social Psychology*, *41*(2), 201–209. https://doi.org/10.1002/ejsp.766

Black, J. E. (2019). An IRT Analysis of the Reading the Mind in the Eyes Test. *Journal of Personality Assessment*, *101*(4), 425–433. https://doi.org/10.1080/00223891.2018.1447946

Boysen, G. A., Isaacs, R. A., Tretter, L., & Markowski, S. (2020). Evidence for blatant dehumanization of mental illness and its relation to stigma. *The Journal of Social Psychology*, *160*(3), 346–356. https://doi.org/10.1080/00224545.2019.1671301

Bruneau, E., Szekeres, H., Kteily, N., Tropp, L. R., & Kende, A. (2020). Beyond dislike: Blatant dehumanization predicts teacher discrimination. *Group Processes & Intergroup Relations*, *23*(4), 560–577. https://doi.org/10.1177/1368430219845462

Buckels, E. E., & Trapnell, P. D. (2013). Disgust facilitates outgroup dehumanization. *Group Processes & Intergroup Relations*, *16*(6), 771–780. https://doi.org/10.1177/1368430212471738

Cacioppo, J. T., Petty, R. E., & Feng Kao, C. (1984). The Efficient Assessment of Need for Cognition. *Journal of Personality Assessment*, *48*(3), 306–307. https://doi.org/10.1207/s15327752jpa4803_13

Cameron, C. D., Harris, L. T., & Payne, B. K. (2016). The Emotional Cost of Humanity: Anticipated Exhaustion Motivates Dehumanization of Stigmatized Targets. *Social Psychological and Personality Science*, *7*(2), 105–112. https://doi.org/10.1177/1948550615604453

Cassese, E. C. (2019). Partisan Dehumanization in American Politics. *Political Behavior*. https://doi.org/10.1007/s11109-019-09545-w

Castano, E., & Giner-Sorolla, R. (2006). Not quite human: Infrahumanization in response to collective responsibility for intergroup killing. *Journal of Personality and Social Psychology*, *90*(5), 804–818. https://doi.org/10.1037/0022-3514.90.5.804

Čehajić, S., Brown, R., & González, R. (2009). What do I Care? Perceived Ingroup Responsibility and Dehumanization as Predictors of Empathy Felt for the Victim Group. *Group Processes & Intergroup Relations*, *12*(6), 715–729. https://doi.org/10.1177/1368430209347727

Cheng, Y., Chen, C., & Decety, J. (2017). How Situational Context Impacts Empathic Responses and Brain Activation Patterns. *Frontiers in Behavioral Neuroscience*, *11*, 165. https://doi.org/10.3389/fnbeh.2017.00165

Christie, R., & Geis, F. L. (1970). *Studies in Machiavellianism*. New York u.a: Academic Press.

Cikara, M., Eberhardt, J. L., & Fiske, S. T. (2011). From Agents to Objects: Sexist Attitudes and Neural Responses to Sexualized Targets. *Journal of Cognitive Neuroscience*, *23*(3), 540–551. https://doi.org/10.1162/jocn.2010.21497

Costello, K., & Hodson, G. (2014). Explaining dehumanization among children: The interspecies model of prejudice. *British Journal of Social Psychology*, *53*(1), 175–197. https://doi.org/10.1111/bjso.12016

Curtis, V., de Barra, M., & Aunger, R. (2011). Disgust as an adaptive system for disease avoidance behaviour. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *366*(1563), 389–401. https://doi.org/10.1098/rstb.2010.0117

Cushman, F., Gray, K., Gaffey, A., & Mendes, W. B. (2012). Simulating murder: The aversion to harmful action. *Emotion*, *12*(1), 2–7. https://doi.org/10.1037/a0025071

Dalsklev, M., & Kunst, J. R. (2015). The effect of disgust-eliciting media portrayals on outgroup dehumanization and support of deportation in a Norwegian sample. *International Journal of Intercultural Relations*, *47*, 28–40. https://doi.org/10.1016/j.ijintrel.2015.03.028

Davidson, R. (2007). *Changing the Brain by Transforming the Mind. The Impact of Compassion Training on the Neural Systems of Emotion*. Presented at the 13th annual Mind and Life Institute Conference, Emory University, Atlanta, GA.

Delgado, N., Bonache, H., Betancort, M., Morera, Y., & Harris, L. T. (2021). Understanding the Links between Inferring Mental States, Empathy, and Burnout in Medical Contexts. *Healthcare*, *9*(2), 158. https://doi.org/10.3390/healthcare9020158

Demoulin, S., Leyens, J., Paladino, M., Rodriguez-Torres, R., Rodriguez-Perez, A., & Dovidio, J. (2004). Dimensions of "uniquely" and "non-uniquely" human emotions. *Cognition & Emotion*, *18*(1), 71–96. https://doi.org/10.1080/02699930244000444

Deroy, O., & Harris, L. T. (Under review). *Human social cognition is distinctively flexible: A higher-order hypothesis on what makes human social cognition special.*

Dimitrijevic, A., Dimitrijevic, A. A., & Marjanovic, Z. J. (2013). *An examinaton of the relationsip between intelligence and attachment in adulthood*. Presented at the International Psychological Applications Conference.

Dojčinović, P. (Ed.). (2012). *Propaganda, war crimes trials, and international law: From speakers' corner to war crimes*. Milton Park, Abingdon, Oxon ; New York, NY: Routledge.

Dojčinović, P. (Ed.). (2020). *Propaganda and international criminal law: From cognition to criminality*. New York: Routledge.

Esses, V. M., Veenvliet, S., Hodson, G., & Mihic, L. (2008). Justice, Morality, and the Dehumanization of Refugees. *Social Justice Research*, *21*(1), 4–25. https://doi.org/10.1007/s11211-007-0058-4

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Field, A. P. (2009). *Discovering statistics using SPSS: And sex, drugs and rock 'n' roll* (3rd ed). Los Angeles: SAGE Publications.

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*(6), 878–902.

Foster, C. (2014). Dignity and the use of body parts. *Journal of Medical Ethics*, *40*(1), 44–47. https://doi.org/10.1136/medethics-2012-100763

Giner-Sorolla, R., & Russell, P. S. (2019). Not Just Disgust: Fear and Anger Also Relate to Intergroup Dehumanization. *Collabra: Psychology*, *5*(1), 56. https://doi.org/10.1525/collabra.211

Goff, P. A., Eberhardt, J. L., Williams, M. J., & Jackson, M. C. (2008). Not yet human: Implicit knowledge, historical dehumanization, and contemporary consequences. *Journal of Personality and Social Psychology*, *94*(2), 292–306. https://doi.org/10.1037/0022-3514.94.2.292

Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, *48*(1), 26–34. https://doi.org/10.1037/0003-066X.48.1.26

Gorusch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: LEA.

Gray, H. M., Gray, K., & Wegner, D. M. (2007). Dimensions of Mind Perception. *Science*, *315*(5812), 619–619. https://doi.org/10.1126/science.1134475

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*(2), 348–362. https://doi.org/10.1037/0022-3514.85.2.348

Gwinn, J. D., Judd, C. M., & Park, B. (2013). Less power = less human? Effects of power differentials on dehumanization. *Journal of Experimental Social Psychology*, *49*(3), 464–470. https://doi.org/10.1016/j.jesp.2013.01.005

Haque, O. S., & Waytz, A. (2012). Dehumanization in Medicine: Causes, Solutions, and Functions. *Perspectives on Psychological Science*, *7*(2), 176–186. https://doi.org/10.1177/1745691611429706

Harris, L. T. (2017). *Invisible mind: Flexible social cognition and dehumanization*. Cambridge, MA: MIT Press.

Harris, L. T., & Fiske, S. T. (2006). Dehumanizing the Lowest of the Low: Neuroimaging Responses to Extreme Out-Groups. *Psychological Science*, *17*(10), 847–853. https://doi.org/10.1111/j.1467-9280.2006.01793.x

Harris, L. T., & Fiske, S. T. (2007). Social groups that elicit disgust are differentially processed in mPFC. *Social Cognitive and Affective Neuroscience*, *2*(1), 45–51. https://doi.org/10.1093/scan/nsl037

Harris, L. T., & Fiske, S. T. (2009). Social neuroscience evidence for dehumanised perception. *European Review of Social Psychology*, *20*(1), 192–231. https://doi.org/10.1080/10463280902954988

Harris, L. T., & Fiske, S. T. (2011). Dehumanized Perception: A Psychological Means to Facilitate Atrocities, Torture, and Genocide? *Zeitschrift Für Psychologie*, *219*(3), 175–181. https://doi.org/10.1027/2151-2604/a000065

Harris, L. T., Lee, V. K., Capestany, B. H., & Cohen, A. O. (2014). Assigning economic value to people results in dehumanization brain response. *Journal of Neuroscience, Psychology, and Economics*, *7*(3), 151–163. https://doi.org/10.1037/npe0000020

Haslam, N. (2006). Dehumanization: An Integrative Review. *Personality and Social Psychology Review*, *10*(3), 252–264. https://doi.org/10.1207/s15327957pspr1003_4

Haslam, N., Bain, P., Douge, L., Lee, M., & Bastian, B. (2005). More human than you: Attributing humanness to self and others. *Journal of Personality and Social Psychology*, *89*(6), 937–950. https://doi.org/10.1037/0022-3514.89.6.937

Haslam, N., & Loughnan, S. (2014). Dehumanization and Infrahumanization. *Annual Review of Psychology*, *65*(1), 399–423. https://doi.org/10.1146/annurev-psych-010213-115045

Haslam, N., & Loughnan, S. (2016). How dehumanization promotes harm. In A. G. Miller (Ed.), *The social psychology of good and evil* (2nd ed., pp. 140–158). New York, N.Y.: Guilford Press.

Hodson, G., & Costello, K. (2007). Interpersonal Disgust, Ideological Orientations, and Dehumanization as Predictors of Intergroup Attitudes. *Psychological Science*, *18*(8), 691–698. https://doi.org/10.1111/j.1467-9280.2007.01962.x

Hodson, G., Kteily, N., & Hoffarth, M. (2014). Of filthy pgis and subhuman mongrels: Dehumanization, disgust, and intergroup prejudice. *Testing, Psychometrics, Methodology in Applied Psychology*, (3), 267–284. https://doi.org/10.4473/TPM21.3.3

Katz, I., & Hass, R. G. (1988). Racial ambivalence and American value conflict: Correlational and priming studies of dual cognitive structures. *Journal of Personality and Social Psychology*, *55*(6), 893–905. https://doi.org/10.1037/0022-3514.55.6.893

Kelman, H. G. (1973). Violence without Moral Restraint: Reflections on the Dehumanization of Victims and Victimizers. *Journal of Social Issues*, *29*(4), 25–61. https://doi.org/10.1111/j.1540-4560.1973.tb00102.x

Kersbergen, I., & Robinson, E. (2019). Blatant Dehumanization of People with Obesity. *Obesity*, *27*(6), 1005–1012. https://doi.org/10.1002/oby.22460

Khorashad, B. S., Baron-Cohen, S., Roshan, G. M., Kazemian, M., Khazai, L., Aghili, Z., … Afkhamizadeh, M. (2015). The "Reading the Mind in the Eyes" Test: Investigation of Psychometric Properties and Test–Retest Reliability of the Persian Version. *Journal of Autism and Developmental Disorders*, *45*(9), 2651–2666. https://doi.org/10.1007/s10803-015-2427-4

Kiesel, A., Steinhauser, M., Wendt, M., Falkenstein, M., Jost, K., Philipp, A. M., & Koch, I. (2010). Control and interference in task switching—A review. *Psychological Bulletin*, *136*(5), 849–874. https://doi.org/10.1037/a0019842

Kiper, J., Wilson, R. A., Lillie, C. and Harris, L. T. (2019). Propaganda, Empathy, and Support for Intergroup Violence: The Moral Psychology of International Speech Crimes. Preprint available at SSRN: https://ssrn.com/abstract=2580521 or http://dx.doi.org/10.2139/ssrn.2580521

Kline, P. (1999). *The handbook of psychological testing* (2nd ed.). London: Routledge.

Kruglanski, A. W., Pierro, A., Mannetti, L., & De Grada, E. (2006). Groups as epistemic providers: Need for closure and the unfolding of group-centrism.

Psychological Review, *113*(1), 84–100. https://doi.org/10.1037/0033-295X.113.1.84

Kteily, N., & Bruneau, E. (2017). Backlash: The Politics and Real-World Consequences of Minority Group Dehumanization. *Personality and Social Psychology Bulletin*, *43*(1), 87–104. https://doi.org/10.1177/0146167216675334

Kteily, N., Bruneau, E., Waytz, A., & Cotterill, S. (2015). The ascent of man: Theoretical and empirical evidence for blatant dehumanization. *Journal of Personality and Social Psychology*, *109*(5), 901–931. https://doi.org/10.1037/pspp0000048

Leyens, J.-P., Cortes, B., Demoulin, S., Dovidio, J. F., Fiske, S. T., Gaunt, R., … Vaes, J. (2003). Emotional prejudice, essentialism, and nationalism The 2002 Tajfel lecture. *European Journal of Social Psychology*, *33*(6), 703–717. https://doi.org/10.1002/ejsp.170

Leyens, J.-P., Rodriguez-Perez, A., Rodriguez-Torres, R., Gaunt, R., Paladino, M.-P., Vaes, J., & Demoulin, S. (2001). Psychological essentialism and the differential attribution of uniquely human emotions to ingroups and outgroups. *European Journal of Social Psychology*, *31*(4), 395–411. https://doi.org/10.1002/ejsp.50

Locke, K. D. (2009). Aggression, narcissism, self-esteem, and the attribution of desirable and humanizing traits to self versus others. *Journal of Research in Personality*, *43*(1), 99–102. https://doi.org/10.1016/j.jrp.2008.10.003

Ma, D. S., Correll, J., & Wittenbrink, B. (2015). The Chicago face database: A free stimulus set of faces and norming data. *Behavior Research Methods*, *47*(4), 1122–1135. https://doi.org/10.3758/s13428-014-0532-5

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods*, *4*(1), 84–99. https://doi.org/10.1037/1082-989X.4.1.84

Maoz, I., & McCauley, C. (2008). Threat, Dehumanization, and Support for Retaliatory Aggressive Policies in Asymmetric Conflict. *Journal of Conflict Resolution*, *52*(1), 93–116. https://doi.org/Threat, Dehumanization, and Support for Retaliatory Aggressive Policies in Asymmetric Conflict

Martherus, J. L., Martinez, A. G., Piff, P. K., & Theodoridis, A. G. (2019). Party Animals? Extreme Partisan Polarization and Dehumanization. *Political Behavior*. https://doi.org/10.1007/s11109-019-09559-4

McFarland, S., Webb, M., & Brown, D. (2012). All humanity is my ingroup: A measure and studies of identification with all humanity. *Journal of Personality and Social Psychology*, *103*(5), 830–853. https://doi.org/10.1037/a0028724

McKinley, N. M., & Hyde, J. S. (1996). The Objectified Body Consciousness Scale: Development and Validation. *Psychology of Women Quarterly*, *20*(2), 181–215. https://doi.org/10.1111/j.1471-6402.1996.tb00467.x

Neff, K. (2008). *Self-Compassion and Other-Focused Responding*. Presented at the 8th Annual Convention of the Society for Personality and Social Psychology, Albuquerque, New Mexico.

Neff, K. D. (2003). The Development and Validation of a Scale to Measure Self-Compassion. *Self and Identity*, *2*(3), 223–250. https://doi.org/10.1080/15298860309027

Oberschall, A. (2006). *Vojislav Seselj's nationalist propaganda: Contents, techniques, aims and impacts, 1990-1994.* Retrieved from

http://icr.icty.org/LegalRef/CMSDocStore/Public/English/Reports/NotIndexable/IT-03-67/MSC5521R0000146871.TIF

Olatunji, B. O., Williams, N. L., Tolin, D. F., Abramowitz, J. S., Sawchuk, C. N., Lohr, J. M., & Elwood, L. S. (2007). The Disgust Scale: Item analysis, factor structure, and suggestions for refinement. *Psychological Assessment, 19*(3), 281–297. https://doi.org/10.1037/1040-3590.19.3.281

Perry, J. L. (1996). Measuring Public Service Motivation: An Assessment of Construct Reliability and Validity. *Journal of Public Administration Research and Theory, 6*(1), 5–22. https://doi.org/10.1093/oxfordjournals.jpart.a024303

Prati, F., Moscatelli, S., Pratto, F., & Rubini, M. (2016). Predicting Support for Arabs' Autonomy from Social Dominance: The Role of Identity Complexity and Dehumanization: Predicting Support for Arabs' Autonomy. *Political Psychology, 37*(2), 293–301. https://doi.org/10.1111/pops.12274

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, *67*(4), 741–763. https://doi.org/10.1037/0022-3514.67.4.741

Preacher, K. J., & MacCallum, R. C. (2002). Exploratory factor analysis in behavior genetics research: Factor recovery with small sample sizes. *Behavior Genetics*, *32*(2), 153–161. https://doi.org/10.1023/A:1015210025234

Roets, A., & Van Hiel, A. (2011). Item selection and validation of a brief, 15-item version of the Need for Closure Scale. *Personality and Individual Differences*, *50*(1), 90–94. https://doi.org/10.1016/j.paid.2010.09.004

Rozin, P., Haidt, J., & McCauley, C. (2008). Disgust. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of Emotions* (3rd ed., pp. 757–776). New York, NY: Guilford Press.

Schnall, S., Haidt, J., Clore, G. L., & Jordan, A. H. (2008). Disgust as Embodied Moral Judgment. *Personality and Social Psychology Bulletin*, *34*(8), 1096–1109. https://doi.org/10.1177/0146167208317771

Semin, G. R., & Fiedler, K. (1988). The cognitive functions of linguistic categories in describing persons: Social cognition and language. *Journal of Personality and Social Psychology*, *54*(4), 558–568. https://doi.org/10.1037/0022-3514.54.4.558

Sherman, G. D., & Haidt, J. (2011). Cuteness and Disgust: The Humanizing and Dehumanizing Effects of Emotion. *Emotion Review*, *3*(3), 245–251. https://doi.org/10.1177/1754073911402396

Singer, T., & Klimecki, O. M. (2014). Empathy and compassion. *Current Biology*, *24*(18), R875–R878. https://doi.org/10.1016/j.cub.2014.06.054

Spreng, R. N., McKinnon, M. C., Mar, R. A., & Levine, B. (2009). The Toronto Empathy Questionnaire: Scale Development and Initial Validation of a Factor-Analytic Solution to Multiple Empathy Measures. *Journal of Personality Assessment*, *91*(1), 62–71. https://doi.org/10.1080/00223890802484381

Stroop, J. R. (1935). Studies of interference in serial verbal reactions. *Journal of Experimental Psychology*, *18*(6), 643–662. https://doi.org/10.1037/h0054651

Tang, S., & Harris, L. T. (2015). Construing a transgression as a moral or a value violation impacts other versus self-dehumanisation. *Revue Internationale de Psychologie Sociale*, *28*(1), 95–123. Cairn.info. Retrieved from Cairn.info.

Thompson, B. (2004). *Exploratory and confirmatory factor analysis: Understanding concepts and applications.* American Psychological Association.

Vaes, J., & Muratore, M. (2013). Defensive dehumanization in the medical practice: A cross-sectional study from a health care worker's perspective. *British Journal of Social Psychology*, *52*(1), 180–190. https://doi.org/10.1111/bjso.12008

van Dillen, L. F., Harris, L. T., van Dijk, W. W., & Rotteveel, M. (2015). Looking with different eyes: The psychological meaning of categorisation goals moderates facial reactivity to facial expressions. *Cognition and Emotion*, *29*(8), 1382–1400. https://doi.org/10.1080/02699931.2014.982514

Vellante, M., Baron-Cohen, S., Melis, M., Marrone, M., Petretto, D. R., Masala, C., & Preti, A. (2013). The "Reading the Mind in the Eyes" test: Systematic review of psychometric properties and a validation study in Italy. *Cognitive Neuropsychiatry*, *18*(4), 326–354. https://doi.org/10.1080/13546805.2012.721728

Viki, G. T., & Abrams, D. (2003). Infra-humanization: Ambivalent sexism and the attribution of primary and secondary emotions to women. *Journal of Experimental Social Psychology*, *39*(5), 492–499. https://doi.org/10.1016/S0022-1031(03)00031-3

Viki, G. T., & Calitri, R. (2008). Infrahuman outgroup or suprahuman ingroup: The role of nationalism and patriotism in the infrahumanization of outgroups. *European Journal of Social Psychology, 38*(6), 1054–1061. https://doi.org/10.1002/ejsp.495

Viki, G. T., Osgood, D., & Phillips, S. (2013). Dehumanization and self-reported proclivity to torture prisoners of war. *Journal of Experimental Social Psychology*, *49*(3), 325–328. https://doi.org/10.1016/j.jesp.2012.11.006

Waytz, A., Cacioppo, J., & Epley, N. (2010). Who Sees Human?: The Stability and Importance of Individual Differences in Anthropomorphism. *Perspectives on Psychological Science*, *5*(3), 219–232. https://doi.org/10.1177/1745691610369336

Waytz, A., & Epley, N. (2012). Social connection enables dehumanization. *Journal of Experimental Social Psychology*, *48*(1), 70–76. https://doi.org/10.1016/j.jesp.2011.07.012

Wuensch, K. L., Jenkins, K. W., & Poteat, G. M. (2002). Misanthropy, idealism and attitudes towards animals. *Anthrozoös*, *15*(2), 139–149. https://doi.org/10.2752/089279302786992621

Zebel, S., Zimmermann, A., Viki, G. T., & Doosje, B. (2008). Dehumanization and Guilt as Distinct but Related Predictors of Support for Reparation Policies. *Political Psychology*, *29*(2), 193–219. https://doi.org/10.1111/j.1467-9221.2008.00623.x

Table 1

The Variables Identified by Previous Research as Correlates of Dehumanization, and Corresponding Scales Used as Inspiration to Create the Items of the Initial 42-item Scale

Factor	Scale
Agency	*
Big 5 Traits	Big Five Inventory (Goldberg, 1993)
Disgust-Sensitivity	Revised Disgust-Sensitivity Scale (Olatunji et al., 2007)
Emotion Regulation	Emotion Regulation Questionnaire (Gross & John, 2003)
Empathy/Compassion	Public Service Motivation Scale – Compassion Subscale (Perry, 1996)
Intelligence	Revised Need for Cognition Scale (Cacioppo et al., 1984)
Machiavellianism	MACH IV (Christie & Geis, 1970)
Meat-Eating Attitudes	*Questions adapted from Bilewicz, Imhoff, & Drogosz, 2011)
Misanthropy	Misantrophy Scale (Wuensch, Jenkins, & Poteat, 2002)
Morality	*Questions adapted from Schnall, Haidt, Clore, & Jordan, 2008
Narcissism	Narcissistic Personality Inventory – Short version (Ames, Rose, & Anderson, 2006)
Need for Closure	Need for Closure Scale – Short version (Roets & Van Hiel, 2011)
Objectification/Sexism	Objectified Body Consciousness Scale (McKinley & Hyde, 1996)
Power	Personal Sense of Power Scale (Anderson, John, & Keltner, 2012)
Prejudice/RWA	Right-Wing Authoritarianism (Altemeyer, 1996)
Secondary Emotions	*
Self-Compassion	Self-Compassion Scale (Neff, 2003)
Social Cognition	*
SDO	Social Dominance Scale (Pratto et al., 1994)

Note. *denotes items created based on previous literature, rather than based on existing scales. RWA = Right-wing authoritarianism. SDO = Social dominance orientation.

Table 2

Items of the Initial Dehumanization Scale and the Corresponding Individual Difference Variables

Items of the initial Humanity Inventory	Variables
1. I often do not enjoy thinking.	Need for Cognition
2. I enjoy solving challenging and complex problems that require a lot of thinking.	Need for Cognition
3. Everyday, I tend to spend a lot of time focussed on how I look.	Objectification
4. I generally make extra efforts to look my best.	Objectification
5. We live in an unequal society where certain groups are inferior to others, and that is OK.	SDO
6. To me, an ideal society is one with complete equality.	**SDO**
7. I am easily upset by seeing people in distress.	**Compassion**
8. I do not care about strangers.	Compassion
9. I feel deeply upset when I see others suffering, and I am often motivated to help them.	**Compassion**
10. I understand that everybody goes through bad experiences, and my feelings are not unique.	Self-Compassion
11. I am very aware of my internal states.	Self-Compassion
12. Clear structure is important in my everyday life.	Need for Closure
13. I usually think obsessively about things.	Need for Closure
14. I am easily disgusted.	Disgust-Sensitivity
15. I have a high tolerance for things that make other people feel gross.	Disgust-Sensitivity
16. I have a great deal of control over other people.	Power
17. Others tend to give much weight to my ideas.	Power
18. I am not a prejudiced person.	**RWA**
19. I believe that humans and animals can experience feelings to the same extent.	Attitudes Towards Animals
20. Animals do not experience a rich mental life.	Attitudes Towards Ani.
21. I think sex between first cousins is ok.	Morality
22. Sometimes one has to do things that may be considered morally wrong to get ahead in life.	Morality
23. Most people are very smart or morally good.	**Machiavellianism**
24. People can be used as a means to an end.	Machiavellianism
25. The planet would be a better place without humans.	Misanthropy
26. I find it easy to supress my emotions.	Emotion Regulation
27. I find it difficult to view emotional situations differently.	Emotion Regulation
28. I am a very social person.	**Big 5 – *Extraversion***
29. Being around too many people makes me nervous.	Big 5 – *Extraversion*
30. I tend to be grumpy from time to time.	Big 5 – *Neuroticism*
31. I am very meticulous.	Big 5 – *Neuroticism*
32. I do not like to try new things.	Big 5 – *Openness*
33. I got very good grades all through school.	Big 5 –*Conscientious.*
34. It is easy to get inside of other people's heads.	Big 5 – *Agreeableness*

35. I am responsible for the events that occur in my life.	Agency
36. I am a nice person.	**Narcissism**
37. I think I am better than the average person.	Narcissism
38. I usually do morally good things.	**Narcissism**
39. I usually do not understand subtle hints people drop during conversation.	Social Cognition Ability
40. I can easily infer other people's thoughts and beliefs during conversation.	Social Cognition Ability
41. Most people do not feel complex emotions like remorse and admiration.	Secondary Emotions
42. People primarily experience simple emotions like fear and happiness.	Secondary Emotions

Note. Items in bold present the final items of the Humanity Inventory.
RWA = Right-wing authoritarianism. SDO = Social dominance orientation.

Table 3

The Final Items of the Humanity Inventory Along the Loading and Communality of Each Item

The Humanity Inventory	Loadings	Communalities
1. I am easily upset by seeing other people in distress.	.653	.637
2. I feel deeply upset when I see others suffering, and I am often motivated to help them.	.603	.752
3. I am not a prejudiced person.	.601	.770
4. I am a very social person.	.598	.390
5. I usually do morally good things.	.594	.663
6. I am a nice person.	.553	.581
7. Most people are very smart or morally good.	.483	.360
8. To me, an ideal society is one with complete equality.	.587	.776

Table 4

Item Analysis

Humanity Inventory Item	**M *(SD)***	**Skewness**	**Kurtosis**	**ISC**	**Difficulty**	**α**
1. I am easily upset by seeing other people in distress.	4.86 *(1.33)*	-.54	-.38	.47	2.8	.67
2. I feel deeply upset when I see others suffering, and I am often motivated to help them.	5.35 *(1.08)*	-.45	.38	.43	3.0	.68
3. I am not a prejudiced person.	4.79 *(1.36)*	-.45	-.58	.46	4.5	.67
4. I am a very social person.	4.23 *(1.46)*	-.09	-.77	.42	2.3	.68
5. I usually do morally good things.	5.57 *(0.94)*	-.95	1.75	.40	3.5	.69
6. I am a nice person.	5.63 *(0.84)*	-.78	1.11	.36	2.4	.70
7. Most people are very smart or morally good.	3.88 *(1.38)*	-.04	-.61	.33	4.5	.70
8. To me, an ideal society is one with complete equality.	4.66 *(1.71)*	-.52	-.81	.45	3.8	.68

Note. ISC = Corrected Item-Total Correlation. Item difficulty was rated by 10 participants, on a scale of 1 = *extremely easy* to 7 = *extremely difficult*; mean ratings are presented here, the data can be found on OSF. α = Cronbach's α if item deleted.

Table 5

Percentage of Response Frequencies

Humanity Inventory Item	**%1**	**%2**	**%3**	**%4**	**%5**	**%6**	**%7**
1. I am easily upset by seeing other people in distress.	0	7.0	9.3	18.6	27.9	30.2	7.0
2. I feel deeply upset when I see others suffering, and I am often motivated to help them.	0	1.2	4.7	10.5	40.7	27.9	15.1
3. I am not a prejudiced person.	1.2	2.3	18.6	16.3	23.3	32.6	5.8
4. I am a very social person.	1.2	14	18.6	16.3	32.6	11.6	5.8
5. I usually do morally good things.	0	1.2	1.2	9.3	27.9	48.8	11.6
6. I am a nice person.	0	0	2.3	5.8	29.1	52.3	10.5
7. Most people are very smart or morally good.	2.3	18.6	15.1	29.1	24.4	8.1	2.3
8. To me, an ideal society is one with complete equality.	4.7	8.1	16.3	11.6	16.3	32.6	10.5

Note. Numbers 1–7 represent the responses as presented to participants, between 1 = *strongly disagree* and 7 = *strongly agree*.

Table 6

Correlation Coefficients Between the Key Measures in Study 2a, Along 95% Confidence Intervals Corresponding to the Correlations Between Each of the Measured Variables and Scores on the Humanity Inventory

	1. HumIn	2. EQ	3. NC	4. RME	5. DS	6. DS-Core	7. DS-A	8. DS-C	9. Stroop	10. SDO	95% CI
2.	.48***	-									[.36, .59]
3.	.19**	.22***	-								[.03, .33]
4.	-.05	.25***	.11	-							[-.17, .07]
5.	.11	.04	-.19**	-.07	-						[-.02, .25]
6.	.07	.07	-.13	.09	.85***	-					[-.06, .19]
7.	.15*	.05	-.18**	-.08	.85***	.55***	-				[.11, .28]
8.	.04	-.08	-.16*	-.26***	.63***	.34***	.38***	-			[-.09, .18]
9.	.18**	.13	-.02	-.04	.15*	.13*	.12	.09	-		[.05, .30]
10.	-.55***	-.35***	-.16*	-.32***	-.14*	-.18**	-.14*	.07	-.13	-	[-.65, -.45]

Note. HumIn = Humanity inventory. EQ = Empathy quotient. NC = Need for cognition. RME = Reading the mind in the eyes test. DS = Disgust-sensitivity. DSS-Core = Core subscale of DSS. DSS-A = Animal reminder subscale of DSS. DSS-C = Contamination subscale of DSS. SDO = Social dominance orientation. 95% confidence intervals were calculated using 1,000 bootstrap samples.

*$p < .05$. **$p < .01$. ***$p \leq .001$.

Table 7

Correlation Coefficients Observed Between the Variables Measured in Study 3, and 95% Confidence Intervals Corresponding to Each of the Variables and Scores on the Humanity Inventory

	1. HumIn	2. HumIn-9	3. IWAH	4. MDD	5. HE	6. Inf-USA	7. Inf-MEX	8. Stroop	9. RTEyes	10. RTPers	95% CI
2.	.98***	-									[.97, .98]
3.	.52***	.47***	-								[.42, .61]
4.	.17**	.22***	-.17**	-							[.05, .30]
5.	.67***	.66***	.39***	.24***	-						[.60, .73]
6.	-.02	.004	-.06	.06	.10	-					[-.17, .14]
7.	-.19**	-.17**	-.07	-.11	-.08	.19**	-				[-.32, -.04]
8.	.13*	.13*	.08	-.13*	-.03	.06	-.01	-			[.01, .26]
9.	.17**	.19**	.04	.01	.15*	.14*	-.07	.49***	-		[.05, .29]
10.	.26***	.28***	.11	.10	.18**	.10	-.11	.43***	.67***	-	[.14, .38]

Note. HumIn = Humanity inventory. HumIn-9 = The 9-item Humanity inventory including the additional potential item of the scale described in Study 1. IWAH = Identification with all of humanity. MMD = Mechanisms of moral disengagement. HE = Humanitarianism-egalitarianism. Inf-USA = Infrahumanization of Americans. Inf-MEX = Infrahumanization of Mexicans. RTEyes = Reaction times of indicating eye colour. RTPers = Reaction times of indicating personality. 95% confidence intervals were calculated using 1,000 bootstrap samples.

*$p < .05$. **$p < .01$. ***$p \leq .001$.

Table 8

Results of the Regression Analyses Conducted in Study 3

Outcome	**Predictor**	***B***	***SE B***	***β***	***t***	***p***	**95% CI**
Infrahumanization of Mexicans (N = 259)	Constant	3.82	1.22	-	3.15	.002	[0.93, 6.73]
	HumIn	-0.65	0.24	-.24	-2.71	.01	[-1.24, -0.05]
	IWAH	0.01	0.22	.003	0.04	.97	[-0.40, 0.41]
	MMD	-0.53	0.38	-.09	-1.41	.16	[-1.42, 0.19]
	HE	0.30	0.24	.11	1.24	.22	[-0.15, 0.77]
			R^2 = .05				
			$F(4, 254) = 3.16$, $p = .02$				
Personality RT (N = 253)	Constant	0.22	0.11	-	1.99	.048	[-0.04, 0.49]
	HumIn	0.07	0.02	.26	2.95	.003	[0.02, 0.11]
	IWAH	-0.002	0.02	-.01	-0.09	.93	[-0.04, 0.04]
	MMD	0.03	0.03	.06	0.87	.39	[-0.06, 0.12]
	HE	-0.002	0.02	-.01	-0.07	.94	[-0.05, 0.04]
			R^2 = .07				
			$F(4, 248) = 4.88$, $p < .001$				
Appearance RT (N = 253)	Constant	0.44	0.11	-	4.11	<.001	[0.20, 0.69]
	HumIn	0.04	0.02	.17	1.92	.06	[-0.004, 0.08]
	IWAH	-0.02	0.02	-.09	-1.19	.24	[-0.07, 0.02]
	MMD	-0.03	0.03	-.06	-0.89	.38	[-0.11, 0.06]
	HE	0.02	0.02	.09	1.00	.32	[-0.02, 0.06]
			R^2 = .04				
			$F(4, 248) = 2.51$, $p = .04$				
Cognitive task switching RT (N = 252)	Constant	0.52	0.08	-	6.23	<.001	[0.34, 0.69]
	HumIn	0.05	0.02	.29	3.13	.002	[0.03, 0.08]
	IWAH	-0.004	0.02	-.02	-0.26	.80	[-0.04, 0.03]
	MMD	-0.05	0.03	-.14	-2.12	.04	[-0.11, 0.03]
	HE	-0.03	0.02	-.18	-2.08	.04	[-0.06, -0.004]

$R^2 = .06$
$F(4, 247) = 3.91, p = .004$

Note. HumIn = Humanity inventory. IWAH = Identification with all of humanity. MD = Mechanisms of moral disengagement scale. HE = Humanitarianism-egalitarianism scale. RT = Reaction time. 95% confidence intervals were calculated using 1,000 bootstrap samples.

Table 9

Correlation Coefficients Between the Variables Measured in Study 4, Along 95% Confidence Intervals Corresponding to the Correlations Between Each of the Measured Variables and Scores on the Humanity Inventory

	M *(SD)*	1.	2.	3.	4.	5.	95% CI
1. Humanity Inventory	5.04 *(0.93)*	-					-
2. % Adjectives	16.27 *(28.97)*	-.04	-				[-.21, .14]
3. % Mental state verbs	6.48 *(13.07)*	.25*	.20	-			[.15, .35]
4. % Interpretive action verbs	4.19 *(4.54)*	-.03	-.41***	-.36***	-		[-.22, .15]
5. % Descriptive action verbs	5.72 (7.52)	-.25*	-.36***	-.29**	.38***	-	[-.40, -.09]
6. Dehumanization Scale	3.54 (1.06)	.27**	.12	.16	-.20	-.17	[.08, .45]

Note. 95% confidence intervals were calculated using 1,000 bootstrap samples.

*$p < .05$. **$p < .01$. ***$p \leq .001$.