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"You Little Creep": Evidence of Blatant Dehumanization of Short Groups

Jonas R. Kunst[1,2], Nour Kteily[3], and Lotte Thomsen[1,2]

Abstract

Physical cues influence social judgments of others. For example, shorter individuals are evaluated less positively than taller individuals. Here, we demonstrate that height also impacts one of the most consequential intergroup judgments—attributions of humanity—and explore whether this effect is modulated by the tendency to value hierarchy maintenance. In Study 1, the shorter participants perceived a range of out-groups to be, the more they dehumanized them, and this tended to be particularly pronounced among those scoring high on social dominance orientation (SDO). In Study 2, participants dehumanized an out-group more when they were led to believe that it was relatively short. Finally, Study 3 applied a reverse correlation approach, demonstrating that participants in general, and especially those scoring high on SDO, represented shorter groups in ways less consistent with full humanity than they represented taller groups. Together, this research demonstrates that basic physical height cues shape the perceived humanity of out-groups.

Keywords

dehumanization, group height, physical cues, social dominance orientation

When the Belgians colonialized the area now known as Rwanda, they exacerbated ethnic divides between the Tutsi and the Hutu by granting the taller Tutsi judicial control over the country as "divinely instituted rulers" (Salzman, 1997). Preferential treatment was also given to Tutsis in the education system, in which a minimum height requirement for admission was strictly enforced (Adelson, 2005; Salzman, 1997). Similarly, Hitler defined height as a main criterion for being an "übermensch" (superior human being) and for becoming part of the "Schutzstaffel" (SS), while Mussolini enforced a height requirement to ensure that only Aryan Italians were admitted as state officials (Adelson, 2005).

The potential link between height and attributions of humanity is also apparent in linguistic associations: Orientational conceptual metaphors across languages associate "up" with rationality and sophistication, and "down" with inferiority and primitiveness (Kövecses, 2006; Lakoff & Johnson, 1980). Further, words like "superior" and "inferior" refer not only to physical location and level of sophistication but also to relative rank in status and dominance hierarchies. In fact, relative physical size is associated with dominance across species (Ellis, 1995; Mazur, 2005), cultures, and language families (Fiske, 1992; Kövecses, 2006); and even preverbal infants use it to infer social dominance (Thomsen, Frankenhuis, Ingold-Smith, & Carey, 2011). Here, we propose that cues of short physical height are linked to the dehumanization of out-groups. We also explore whether those supporting (vs. opposing) the principle of intergroup dominance may be particularly influenced by the conceptual association between shorter physical height and lower rank.

Although research thus far has not investigated the link between the average height of group members and humanity attributions, various studies suggest the role of height as a physical marker influencing how we evaluate others. The shorter individuals are the less attractive, competent, moral, and intelligent we perceive them to be (Blaker et al., 2013; Chu & Geary, 2005; Jackson & Ervin, 1992; Lester & Sheehan, 1980; Lindeman & Sundvik, 1994; Pierce, 1996; Roth & Eisenberg, 1983; Sorokowski, 2010; van Vugt & Tybur, 2016; Young & French, 1996, 1998). In fact, height maps not only onto the attitudes held about short others but also to actual real-world outcomes: Being short is associated with several indicators of social rank such as diminished occupational and reproductive success (Gawley, Perks, & Curtis, 2009; Judge & Cable, 2004; Nettle, 2002a, 2002b; Steckel, 1995).

This existing research has focused on the general perception of short individuals and has not examined attributions of

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humanity or the question of whether height also shapes judgments about *groups*. Might physical height cue dehumanization of entire out-groups? People diminish others' humanity in a variety of ways that, notably, converge with how short individuals are devalued. Just as short people are seen as less moral, cognitively able or competent, people dehumanize out-groups when they see them as immoral or as lacking in cognitive sophistication (Epley & Waytz, 2010; Esses, Veenvliet, Hodson, & Mihic, 2008; Haslam, 2006; Kteily, Bruneau, Waytz, & Cotterill, 2015). Moreover, as noted earlier, smaller size is conceptually associated with lower rank and inferiority, and low status often forms a basis for dehumanization (Haslam & Loughnan, 2014; Vaes, Leyens, Paladino, & Pires, 2012). Accordingly, we predict that shorter groups will be perceived as less human than taller groups. Although we posit a general link between height and humanity attributions, we also explore whether this effect is especially pronounced among those more motivated to enforce intergroup hierarchy and who might therefore be most sensitive to dominance cues communicated by height. People with high social dominance orientation (SDO; Ho et al., 2015; Pratto, Sidanius, Stallworth, & Malle, 1994) prefer society to be hierarchically structured, such that certain groups dominate others. This preference is associated with a range of ideological beliefs, policy attitudes, and behavioral intentions justifying and enforcing the unequal social order (Ho et al., 2015; Kteily, Ho, & Sidanius, 2012; Kteily, Sheehy-Skeffington, & Ho, 2017; Kunst, Fischer, Sidanius, & Thomsen, 2017; Pratto, Sidanius, & Levin, 2006; Sidanius & Pratto, 1999; Thomsen, Green, & Sidanius, 2008). Consistent with high SDO individuals' specific concern with enforcing status boundaries between groups (Ho, Sidanius, Cuddy, & Banaji, 2013; Kteily, Cotterill, Sidanius, Sheehy-Skeffington, & Bergh, 2014; Thomsen et al., 2008), SDO particularly predicts bias and contempt toward weak groups at the bottom of the hierarchy (Duckitt, 2006). Among the hostile perceptions associated with SDO is precisely the tendency to deny low-status out-groups' humanity, a framing potentially providing strategic benefits to those who seek to maintain intergroup domination: Controlling, restraining, and even killing animals may be justified or even desirable, as in the case of rodents and vermin to which dehumanized out-groups are often compared (Haslam, 2006). Indeed, people scoring high on SDO tend to show more blatant (Esses et al., 2008; Kteily et al., 2015; Kteily, Hodson, & Bruneau, 2016) as well as implicit out-group dehumanization (Costello & Hodson, 2010; Hodson & Costello, 2007), whereas this tendency is weaker or nonexistent among those scoring especially *low* on SDO. We therefore tested whether high SDOs would be especially likely to use body height (a marker of formidability and dominance) in making their humanity attributions toward groups. We also tested whether height cues would matter less among low SDOs, who generally refrain from dehumanizing out-groups and, hence, should be less influenced by physical cues in their judgments.

We tested our predictions across three studies. Study 1 tested whether the shorter participants perceived real-life out-groups to be, the more they dehumanized them. Study 2 experimentally manipulated the height of a fictional out-group, predicting that a shorter group would be dehumanized more than a taller one. Finally, Study 3 used the reverse correlation technique (Dotsch & Todorov, 2012) to tap and compare participants' representations of short and tall groups in terms of their humanity. Across studies, we focused on White participants to keep the average in-group height constant. Moreover, we tested whether the predicted effects would be especially pronounced among participants scoring high on SDO. We focus primarily on dehumanization using the "Ascent of (Hu)man" Scale of blatant dehumanization, given its high face and predictive validity (Kteily et al., 2015). To verify that our effects are not limited to a specific measure, we also examined the extent to which individuals attributed targets a series of blatantly dehumanizing traits (Studies 1 and 2; Bastian & Haslam, 2010; Kteily et al., 2015) and dehumanized them on a separate face-valid measure of overt humanity attributions (Study 3).

Study 1

Method

Participants

Power analysis indicated that 348 participants would provide 90% power to observe a small interaction effect ($f^2 = .05$, $\alpha = .05$). We collected data from 502 participants through Amazon Mechanical Turk for a study on "social issues," hoping to meet this criterion and ended up with 381 White American participants ($M_{age} = 37.53$, $SD_{age} = 12.41$; 52.5% men). For this and all remaining studies, all conditions and measures are reported. No participants were excluded.

Procedure

Perceived height differences. On sliding-response scales (range: 4–8; 0.1 ft. units), participants rated the average height of Whites, Indians, Chinese, Blacks, Arabs, Jews, Latinos, and Native Americans in randomized order (see Table 1). Difference scores were created subtracting the perceived height of the out-group from that of the White in-group. Hence, higher scores reflected perceptions of out-groups being shorter than the in-group. We also computed a composite score averaging the perceived height differences between the in-group and all out-groups ($\alpha = .84$).

SDO. Participants completed the Short-Form SDO-7 Scale (Ho et al., 2015), rating (1 *strongly oppose* to 7 *strongly favor*) 8 items (e.g., "An ideal society requires some groups to be on top and others to be on the bottom"; $\alpha = .93$).

Ascent dehumanization. We used a modified version of the Ascent Scale (Kteily et al., 2015) to measure blatant dehumanization of the eight groups mentioned above in randomized order. The scale uses the "Ascent of (Hu)man" image depicting evolutionary progress, with five silhouettes ranging from a quadrupedal human ancestor to a full modern-day human. It

Table 1. Means and Standard Deviations for Perceived Height Difference and Dehumanization Across Target Groups.

	Target Out-Group							
Variable	Indians	Chinese	Blacks	Arabs	Jews	Latinos	Native	Average[a]
$M_{\text{ascent dehumanization}}$ (SD)	4.91* (16.17)	1.84* (10.80)	7.53* (22.38)	9.63* (23.22)	0.88 (11.80)	4.80* (15.89)	4.20* (13.91)	4.83* (14.04)
$M_{\text{trait dehumanization}}$ (SD)	0.22* (1.51)	−0.24* (1.24)	1.05* (2.28)	1.26* (2.40)	−0.32* (1.25)	0.49* (1.72)	0.24* (1.51)	0.39* (1.43)
$M_{\text{height difference}}$ (SD)	0.21* (0.34)	0.42* (0.36)	−0.13* (0.25)	0.17* (0.35)	0.16* (0.29)	0.26* (0.27)	0.11* (0.34)	0.17* (0.23)

Note. Higher dehumanization scores mean more dehumanization of the out-group relative to the in-group. Height difference refers to relative height estimate of White in-group compared to target out-group (higher scores = perceptions of out-group as shorter).
[a]Composite score for all out-groups.
*Significantly different from 0 at $p \leq .004$.

requires participants to use sliders to rate the group's "evolvedness" from 0 (*quadrupedal human ancestor*) to 100 (*image of full human*). In the original version of the scale, the silhouettes differ in height, with the shortest silhouette (quadrupedal human ancestor) also being the least human. As this constitutes a potential confound given this study's goals, we matched the height of the images on the scale (see Figure S1 in the Online Supplemental Material). Moreover, to control for response bias, half the participants completed the dehumanization scale presented in its typical order (with the fully human silhouette appearing on the far right of the scale) and the other half in reversed order. Consistent with Kteily, Bruneau, Waytz, and Cotterill (2015), we calculated out-group dehumanization by subtracting the perceived humanness of each out-group from the White in-group's, such that higher values indicated more relative dehumanization. We also created a composite score of these difference estimates for all out-groups ($\alpha = .93$).

Trait dehumanization. From 0 (*not at all*) to 10 (*very much*), participants rated how savage, primitive, sophisticated (reverse scored), aggressive, irrational, and lacking in self-control they perceived the White in-group and each of the out-groups to be. These items were selected based on prior research suggesting their relevance to perceptions of full humanity (see Bastian & Haslam, 2010; Haslam, 2006; Kteily et al., 2015). After aggregating trait ratings for each group ($\alpha s \geq .80$), we subtracted the mean rating for Whites from that for each of the out-groups (i.e., higher scores indicated more relative dehumanization). We also calculated an overall composite scale across groups based on these difference scores ($\alpha = .92$).

Results

Participants dehumanized most groups relative to their in-group (see Table 1). Importantly, as predicted, the shorter participants perceived out-groups to be, the more they dehumanized them on both measures (see Table 2). This was the case across all out-groups on average as well as for various groups taken individually: For the Ascent Scale, perceiving the

out-group as shorter than the in-group was linked to more dehumanization of Indians, Chinese, Arabs, Latinos, and Native Americans, but not Blacks and Jews. For the trait dehumanization measure, perceiving the out-group as shorter than the in-group predicted more dehumanization of Arabs, Jews, and Latinos. SDO was related to larger perceived height differences between the White in-group and the out-groups on the composite score (and for Indians, Chinese, Arabs, Jews, and Latinos individually), and, consistent with prior research, predicted more dehumanization on both measures when averaging across all groups (and for most individual groups).

Next, we ran regressions in which perceived height, SDO, and their interaction were added as predictors of ascent out-group dehumanization. Consistent with the correlations above, SDO and height difference had main effects on (greater) dehumanization of most out-groups. Furthermore, SDO scores also significantly moderated the effect of height estimates on ascent dehumanization for the composite scale (and for Chinese, Blacks, Latinos, and Native Americans individually; see Table 3). For the composite scale, the relationship between perceiving the out-group as shorter than the in-group and greater out-group dehumanization was significant for high SDOs but not for low SDOs (see Figure 1; also see Figure S2 in the Online Supplemental Material). This same pattern held when specifically considering Chinese and Native American targets. For Latino targets, the link between height and dehumanization was significantly stronger among high SDOs but also held among low SDOs. One notable exception was found for the Black out-group. Here, there was no significant relationship between perceived height and increased dehumanization for high SDOs; we did unexpectedly observe that the shorter low SDOs perceived Blacks to be relative to Whites, the *less* they dehumanized them. SDO did not moderate any of the effects on trait measure dehumanization (see Table S1 in the Online Supplemental Material).

Preliminary Discussion

The first study provided initial support for our general hypothesis that people's perceptions of a group's height are associated

Table 2. Correlations Between Perceived Height Difference, Dehumanization, and Social Dominance Orientation (SDO) for Each Target Group.

	Target Out-Group							
Correlated Variables	Indians	Chinese	Blacks	Arabs	Jews	Latinos	Native	Average[a]
Correlation between perceived height difference and dehumanization								
$r_{height\ diff.,\ ascent\ dehumanization}$	0.12*	0.23***	0.03	0.30***	0.07	0.40***	0.15**	0.33***
$r_{height\ diff.,\ trait\ dehumanization}$	0.08	0.08	−0.01	0.15**	0.15**	0.35***	0.06	0.23***
SDO's correlations with perceived height difference and dehumanization								
$r_{SDO,\ height\ diff.}$	0.11*	0.11*	0.08	0.20***	0.19***	0.24***	0.09	0.20***
$r_{SDO,\ ascent\ dehumanization}$	0.19***	0.14**	0.27***	0.31***	0.05	0.21***	0.19***	0.25***
$r_{SDO,\ trait\ dehumanization}$	0.29***	0.15**	0.46***	0.46***	0.21***	0.39***	0.29***	0.41***

Note. Height diff. refers to relative height estimate of White in-group compared to target out-group (higher scores = perceptions of out-group as shorter).
[a]Composite score for all out-groups.
*p < .05. **p < .01. ***p < .001.

Table 3. SDO, Perceived Height Difference, and Their Interaction Predicting Out-Group Ascent Dehumanization in Study 1.

Target	*F*	*B*	95% CI	*β*	*t*	*p*
Indians	7.23***					
SDO		1.92	[0.83, 3.02]	.17	3.45	<.001
Height diff.		5.95	[1.04, 10.85]	.12	2.38	.018
SDO × Height Diff.		2.79	[−0.49, 6.08]	.09	1.67	.096
Chinese	13.11***					
SDO		0.92	[0.20, 1.63]	.12	2.52	.121
Height diff.		6.78	[3.86, 9.71]	.23	4.56	<.001
SDO × Height Diff.		3.44	[1.48, 5.39]	.17	3.46	<.001
Blacks	12.67***					
SDO		4.20	[2.72, 5.68]	.28	5.58	<.001
Height diff.		−5.99	[−15.86, 3.87]	−.07	−1.19	.233
SDO × Height Diff.		9.33	[2.80, 15.87]	.16	2.81	.005
Arabs	23.31***					
SDO		4.23	[2.73, 5.74]	.27	5.52	<.001
Height diff.		13.61	[5.84, 21.38]	.21	3.44	<.001
SDO × Height Diff.		2.97	[−2.57, 8.52]	.06	1.05	.293
Jews	1.89					
SDO		0.30	[−0.52, 1.12]	.04	0.71	.476
Height diff.		3.86	[−0.56, 8.27]	.10	1.72	.087
SDO × Height Diff.		−3.07	[−6.39, .25]	−.10	−1.82	.070
Latinos	29.11***					
SDO		1.30	[0.28, 2.32]	.12	2.50	.013
Height diff.		19.52	[13.77, 25.27]	.33	6.68	<.001
SDO × Height Diff.		5.64	[1.53, 9.75]	.13	2.70	.007
Natives	9.49***					
SDO		1.64	[0.71, 2.57]	.17	3.46	<.001
Height diff.		6.55	[2.48, 10.62]	.16	3.17	.002
SDO × Height Diff.		3.56	[0.85, 6.27]	.13	2.58	.010
Average (all groups)	25.50***					
SDO		1.82	[0.92, 2.72]	.19	3.97	<.001
Height diff.		16.38	[10.40, 22.37]	.26	5.38	<.001
SDO × Height Diff.		7.27	[2.98, 11.56]	.16	3.33	.001

Note. Height diff. refers to relative height estimate of the White in-group compared to the target out-group (higher scores = perceptions of out-group as shorter). Product terms are mean centered. SDO = social dominance orientation; CI = confidence interval.
***p < .001.

with their humanity attributions. The shorter groups were perceived to be, the more they tended to be dehumanized. Our results suggest an important exception: Being perceived as taller did not result in less dehumanization of Blacks. Blacks are typically seen as threatening, stereotyped as large, imposing (Wilson, Hugenberg, & Rule, 2017), and as having "super-human" strength (Waytz, Hoffman, & Trawalter, 2015). Indeed, Blacks were the only group rated significantly *taller*
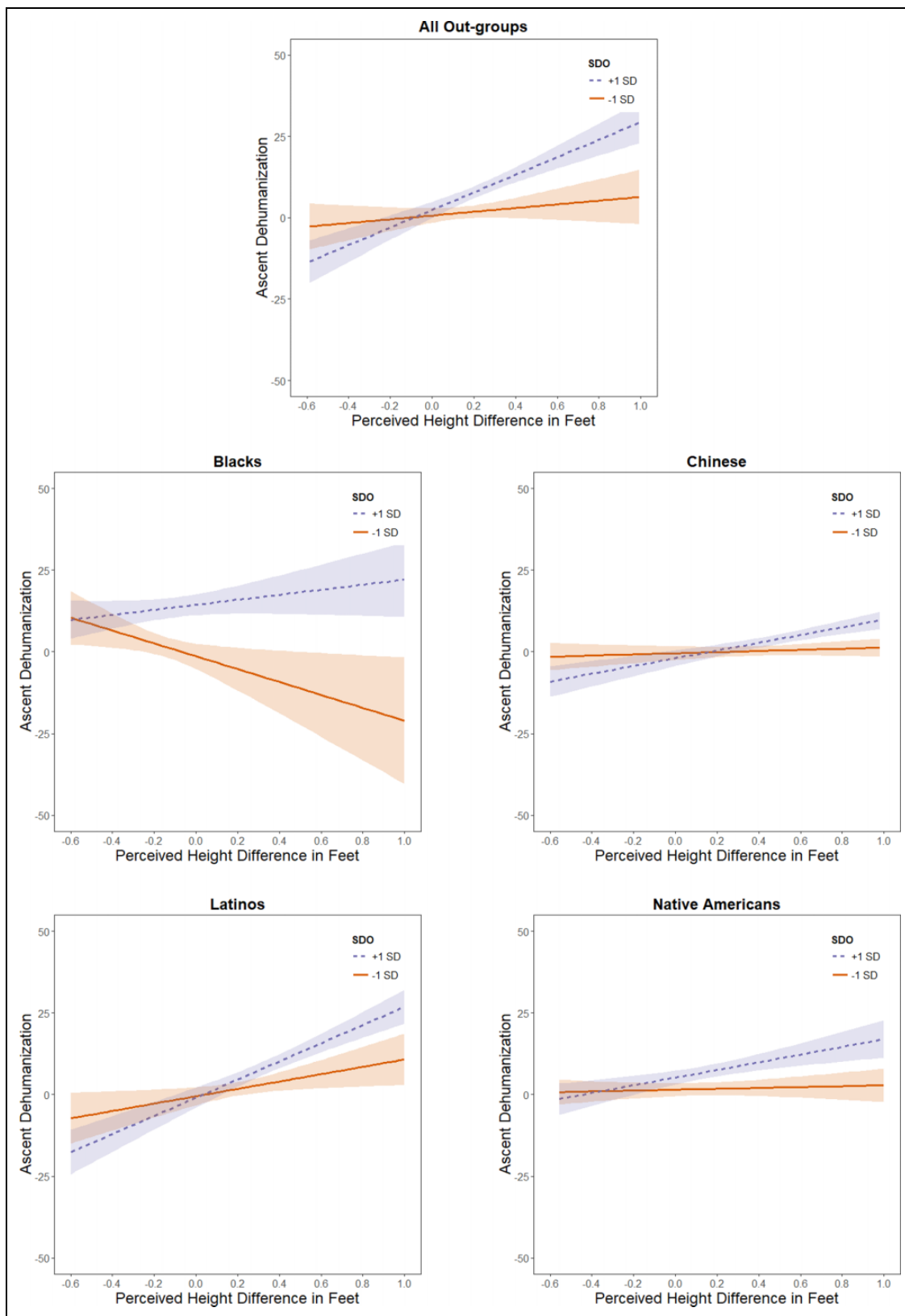
Figure 1. The associations between perceived height difference between the in-group and out-group (higher scores = perceptions of out-group as shorter) and ascent dehumanization are displayed at varying levels of social dominance orientation (SDO) in Study 1. Shaded areas represent 95% confidence intervals. See Figure S2 in the Online Supplemental Material for *p* values of the slopes.

than the in-group. Our effects might therefore hold mostly when the out-group is shorter than the in-group; when it is taller, more height might be threatening rather than humanizing.

For dehumanization on the Ascent Scale, results also suggested that our proposed height–dehumanization relationship was, for several out-groups, most pronounced among participants scoring high on social dominance—those participants most likely to dehumanize out-groups in the first place—and less so among individuals especially low in SDO (who reject the principle of group dominance). Again highlighting differences for Blacks, low SDOs were less likely to dehumanize Blacks when they saw them as shorter (perhaps because this mitigated physical threat). Jews were another exception, with high SDOs no less likely to dehumanize Jews, they saw as taller on the Ascent Scale, a pattern worth further investigating. Although speculative, this might have to do with the fact that dehumanizing stereotypes of Jews focus on perceived intellectual deviousness (and less so on physical dimensions). It was also the case that, in our sample, there was no evidence of mean dehumanization of Jews, potentially restricting variance.

Study 1 provided overall correlational evidence for our hypothesis. Still, it suggested some heterogeneity based on existing stereotypes of real-world groups. In Study 2, we therefore experimentally manipulated the height of a novel group and measured dehumanization.

Study 2

Method

Participants

Based on the power criteria and procedure from Study 1, 384 White Americans were recruited ($M_{age} = 38.05$, $SD_{age} = 12.73$; 49.2% women).

Procedure

Participants were randomly assigned to one of the two conditions. In both, they were told that they would be asked to rate a randomly chosen group of people and were then presented with a description of the group. For both conditions, this text was identical except that we experimentally manipulated the group's height:

> This group of people has a population size of 4 million and a population density of 82.21 people/sq. mile. It has a median age of 34 and its average height is (dependent on condition: 6.01/5.20 ft).

Hence, the group height was 6.01 ft. in the *tall group condition* and 5.20 ft. in the *short group condition*. Across conditions, the same picture of a group silhouette and a line representing its respective height accompanied the text (see Figure S3 in the Online Supplemental Material). The text and picture were presented at the top of the screen while participants completed the height-matched ascent and trait dehumanization measures ($\alpha = .86$) from Study 1 but not when they completed SDO ($\alpha = .91$), demographics or the manipulation check, in which they had to recall the group's height on a slider scale with 0.1 ft. as units.

Results

Participants in the short group condition recalled the group of people to be significantly shorter, $M = 5.28$, $SD = .24$, than did those in the tall group condition, $M = 6.03$, $SD = .16$, $t(326.88) = 36.42$, $p < .001$, $\eta^2 = .78$, 95% confidence interval (CI) of the difference: [0.71, 0.79]. As predicted, t tests comparing both conditions showed that participants dehumanized the short group more than the tall group on the (height-matched) Ascent Scale, $t(366.69) = -2.43$, $p = .016$, $\eta^2 = .02$, 95% CI of the difference: [−6.15, −0.64], and trait-dehumanization measure, $t(363.09) = -2.04$, $p = .042$, $\eta^2 = .01$, 95% CI of the difference: [−0.70, −0.01]; see Figure 2. Next, we conducted moderated regression analyses, testing the effect of experimental condition on each dehumanization measure at levels of SDO. Neither effect was significantly moderated by SDO ($ps < .502$). Indeed, surprisingly SDO was unrelated to either dehumanization measure, $rs(382) < .06$, $ps > .283$.

Preliminary Discussion

The second study provided experimental support for our general hypothesis. Learning that a novel group was short caused participants to see it as less human than a tall group. However, here, SDO did not relate to dehumanization (in contrast to previous research), nor did it moderate the effects of height on dehumanization. One explanation may be the use of artificial groups, which are not a part of individuals' social hierarchy, and hence might not activate the dominance drives that are otherwise central to high SDOs' psychology. Still, that height influenced individuals' humanity attributions despite the fact that the groups were artificial suggests that individuals, on average, infer humanity from height even in the (likely) absence of an active motivation to subordinate a given group, speaking to the generality of the height–humanity association.

Although the first two studies support the idea that group height can influence humanity attributions, one limitation is that they used self-report dehumanization measures. In the last study, we therefore examined and compared participants' representations of short and tall groups using the reverse correlation approach (Dotsch & Todorov, 2012). We predicted that participants' representation of short groups would be less fully human than that of tall groups and tested whether this difference might be moderated by SDO.

Study 3

Participants

Reverse correlation task. We sought to recruit at least 15 participants per cell, consistent with previous reverse correlation research (e.g., Dotsch, Wigboldus, & Van Knippenberg, 2013). A total of 120 participants were recruited
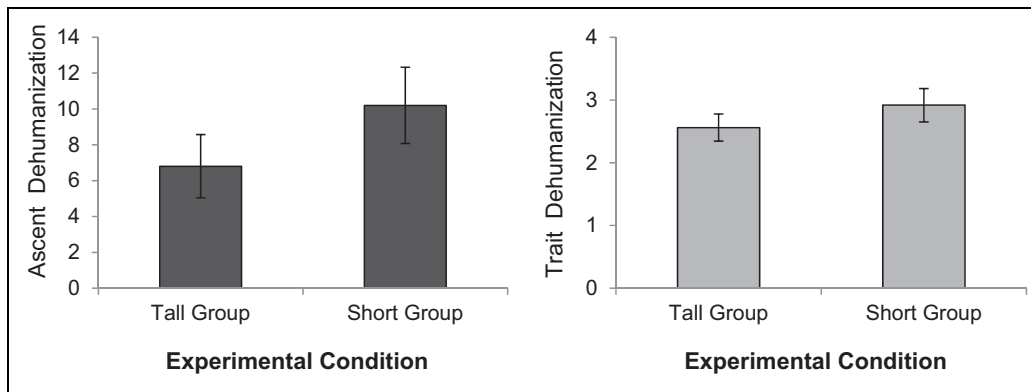
Figure 2. Mean differences between the experimental conditions in Study 2 are displayed. Higher scores indicate greater dehumanization. The scale range was 0–100 for the dehumanization measure and 0–10 for the trait dehumanization measure. Error bars represent 95% confidence intervals.

($M_{age} = 40.16$, $SD_{age} = 12.45$; 48.3% women; $M_{SDO} = 3.38$, $SD_{SDO} = 2.02$) who had been prescreened as scoring low or high on SDO one year prior. This sample was used to test for the main effect of the height-manipulation described later on ($n = 59$ and 61 per cell). To test for effects moderated by SDO, 91 participants were selected who had especially high ($M \geq 5$; $n = 37$) or low ($M \leq 3$; $n = 54$) current SDO scores. For the test of moderated effects, each experimental cell met the preselected minimum of 15 participants. All participants were White, except for one participant who was excluded from analyses.

Rating task. An independent sample rated the representations generated by participants in the reverse correlation task. Power analyses indicated that 94 participants would provide 95% power to detect a small effect ($f = .15$, $\alpha = .05$, $r_{repeated} = .60$). Hence, 99 White Americans ($M_{age} = 42.16$, $SD_{age} = 13.06$; 62.6% men) were recruited.

Procedure

Reverse correlation task. To create the face stimuli for 300 trials, random noise patterns were superimposed on a male Caucasian base image using the standard parameters of the *rcicr* script (Dotsch, 2016; see Online Supplemental Material for details). Participants in the *tall group condition* were told that "in each trial, one face is from a person who belongs to a tall group, and the other is from a person who belongs to a group of average height" and to select the individual that looked like he was from the tall group. Using matched instructions, participants in the *short group condition* were told that one individual belonged to a short group and the other to a group of average height and to select the one from the short group. In total, participants completed 300 trials presented in randomized order. Finally, participants completed the short-form SDO-7 scale ($\alpha = .96$).

Rating task. The independent sample of participants rated all classification images generated in the reverse correlation task

on the height-matched Ascent Scale. They were told that the images represented the average appearance of different groups of people. Next, we administered a second explicit dehumanization measure, telling participants that "a computer algorithm was used to generate the faces" and to rate the extent to which the faces looked "fully human" on a sliding-response scale from 0 (*not at all*) to 100 (*very much*). Both dehumanization measures, which were positively correlated, $rs(97) < .60$, $ps < .001$, were reverse scored such that higher values represented more dehumanization.[1] In all tasks, participants also rated three filler images randomly selected from the reverse correlation stimuli to make the comparison of interest less salient following Brown-Iannuzzi, Dotsch, Cooley, and Payne (2016).

Results

Main Effect of Short Versus Tall Target Condition

We first considered how the images differed in the two image classification conditions using all participants. We generated average composite images for each condition as in prior research (Dotsch & Todorov, 2012; see Figure 3) and then had them rated by the independent sample of participants. Paired-samples t tests revealed that the classification image generated in the short group condition was rated as looking less human than the classification image generated in the tall group condition on both dehumanization measures, Ascent Scale: $t(98) = 2.03$, $p = .046$, $\eta_p^2 = .04$, 95% CI of the difference: [0.06, 6.18]; explicit dehumanization item: $t(98) = 4.74$, $p < .001$, $\eta_p^2 = .19$, 95% CI of the difference: [04.84, 11.81]; see Figure 4.

Test of Moderation by SDO

To examine evidence for moderation by SDO, we generated separate classification images (see Figure 5) using only those participants in each condition that were especially high and low on SDO ($n = 91$; see Procedure) and had these rated by the same independent sample. We ran a 2 (SDO: low vs. high) ×
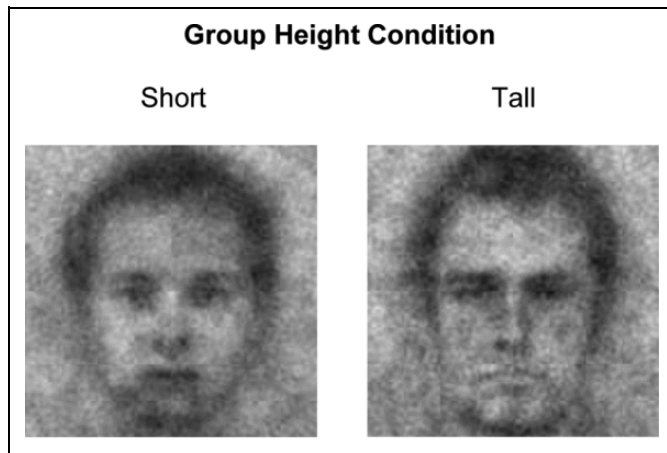
Figure 3. Classification images generated by participants in the "short" and "tall" group conditions in Study 3 are displayed.
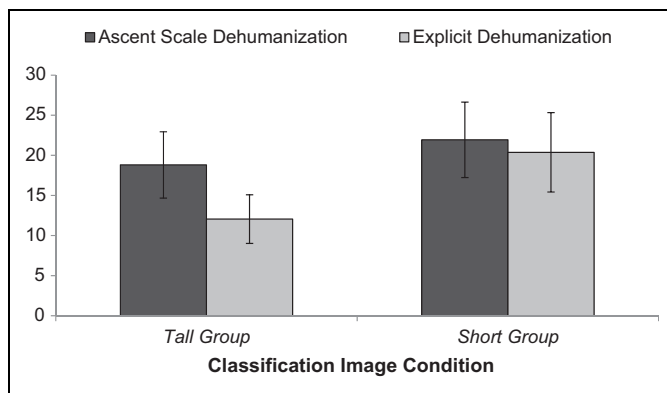

Figure 4. The independent sample rated the classification image of the short group generated in the reverse correlation task as looking less human than the tall group across two different measures of dehumanization. Higher scores indicate greater dehumanization. Both scales range from 0 to 100. Error bars represent 95% confidence intervals.

2 (height condition: short vs. tall) within-subject repeated measurements ANOVA to assess rated dehumanization of the images. First, there was a main effect of SDO for both measures, with images generated by high SDOs rated as looking less human, Ascent Scale: $F(1, 98) = 40.99$, $p < .001$, $\eta_p^2 = .30$; explicit dehumanization measure: $F(1, 98) = 23.37$, $p < .001$, $\eta_p^2 = .19$. Second, there was also a main effect for height, with images generated in the shorter condition rated as less human, Ascent Scale: $F(1, 98) = 26.76$, $p < .001$, $\eta_p^2 = .22$; explicit dehumanization measure: $F(1, 98) = 44.19$, $p < .001$, $\eta_p^2 = .31$. Third and most importantly, the interaction between SDO and height condition was significant for both measures, Ascent Scale: $F(1, 98) = 28.11$, $p < .001$, $\eta_p^2 = .22$; explicit dehumanization measure: $F(1, 98) = 34.88$, $p < .001$, $\eta_p^2 = .26$. Beginning with the Ascent Scale, the classification image of the short group generated by high SDOs was dehumanized relative to the image of the tall group, $t(98) = 7.31$, $p < .001$, $\eta_p^2 = .35$ (see Figure 6); there was no effect of height for low
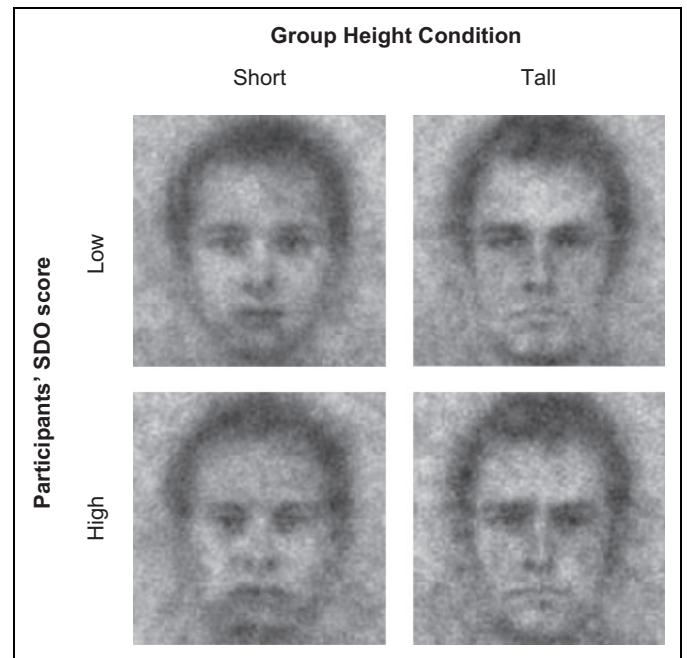

Figure 5. Classification images for a perceived short and tall group members generated by participants scoring especially low or high on social dominance orientation in Study 3 are displayed.

SDOs, $t(98) = .45$, $p = .655$. For the explicit dehumanization measure, the image generated by low SDOs in the short condition was rated as looking less fully human than that in the tall condition, $t(98) = 3.49$, $p = .001$, $\eta_p^2 = .11$, but this difference was even greater for the images generated by high SDOs, $t(98) = 7.59$, $p < .001$, $\eta_p^2 = .37$.

Preliminary Discussion

Instead of presenting participants with artificial groups of fixed height as in Study 2, we used the reverse correlation technique to assess their representation of short and tall group members. Participants on average generated representations of a short group that were rated by a separate sample as less humanlike than representations of a tall group. Consistent with Study 1, participants' SDO seemed to matter: The effect of height condition on perceivers' humanity rating was largest for images generated by high (vs. low) SDO participants.

Of note, the classification images in the short conditions—particularly those from low SDOs—seem more juvenile in appearance. It may therefore be that these images were rated as less fully human primarily because the targets were denied full human agency (i.e., seen as immature; incapable of taking care of themselves) rather than experience (Gray, Gray, & Wegner, 2007), a possibility worth further investigation. That the image high (but not low) SDOs generated in the short condition was dehumanized more on the Ascent Scale does also suggest that high SDOs' representation of short groups likens them not only to incapable juveniles but also specifically to lower animals.
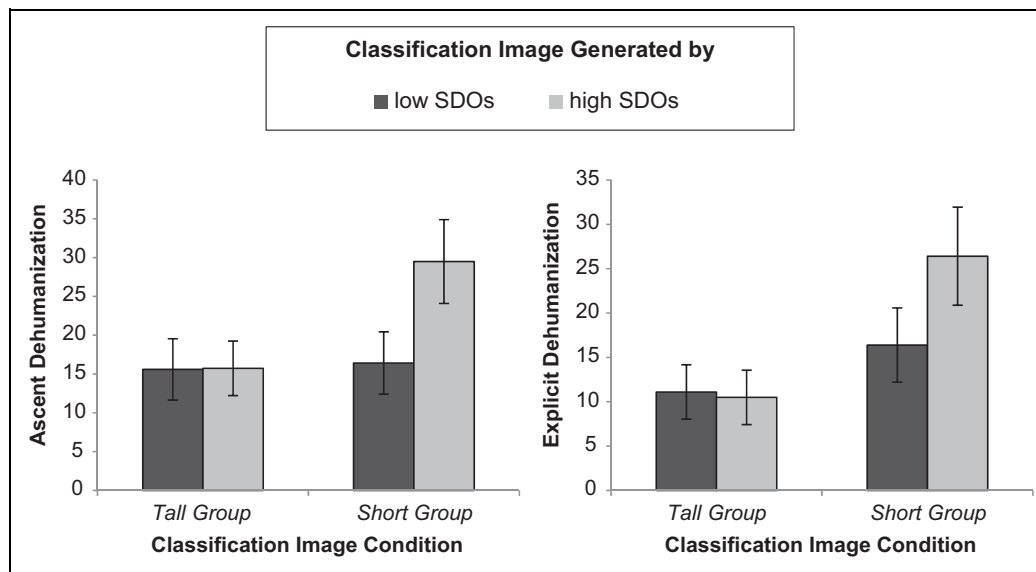
Figure 6. Ratings of classification images of tall and short groups generated by low and high social dominance orientation participants in the reverse correlation task are displayed. Higher scores indicate greater dehumanization. Both scales range from 0 to 100. Error bars represent 95% confidence intervals.

General Discussion

Although research has shown that individuals' body height influences how they are evaluated on a personal level, no prior study has investigated whether similar processes can be observed at the group level. The present research demonstrated that group height indeed can impact even determinations of basic humanity.

In Study 1, participants' tendency to dehumanize a range of ethnic out-groups was systematically associated with their perceived average height, with shorter groups being rated as less human than taller groups. In Study 2, experimentally manipulating a fictional out-group's height causally affected dehumanization, with the same group rated as less human when presented as short versus tall. Finally, consistent with the pattern in Studies 1 and 2, participants' representations of short groups in Study 3 were rated by an independent sample—blind to the hypothesis—as less humanlike than participants' representations of tall groups.

Physical size indicates dominance across phylo- and onto-genesis, and height and vertical position metaphorically map onto hierarchical rank across cultures and language families (so that dominant individuals and groups are perceived to be placed above subordinates in the hierarchy; Fiske, 1992; Lakoff & Johnson, 1980). Hierarchical rank is a fundamental dimension along which human (and animal) societies around the world are organized and is thereby for individuals important to encode (Chiao, 2010; Sapolsky, 2004; Zink et al., 2008). There is therefore good reason for individuals in general to attend to physical cues associated with dominance—like height—in making their judgments about rank, and this could extend to judgments about where groups lie in the "hierarchy" from full human to lower animal. Consistent with this, we

observed across studies that group height predicted relative dehumanization averaging across all participants, suggesting that the use of height in making humanity attributions is not restricted to those most supportive of hierarchy.

Still, those higher in SDO are particularly inclined to see the world in hierarchical terms, whereas the reverse is true among low SDOs who reject the principle of group dominance; levels of SDO also predict dehumanization, with low SDOs often refraining from overt dehumanization (Esses et al., 2008; Hodson & Costello, 2007; Kteily et al., 2015). High SDOs might, thus, be more (and low SDOs less) inclined than the average person to attend to and be swayed by physical cues of dominance such as height when making attributions of groups' humanity—perhaps particularly when these groups are relevant to their social system. Studies 1 and 3 provided preliminary support for this idea: those higher in SDO were especially likely to dehumanize short groups and this tendency was absent among low SDOs (although, in Study 1, this was true only for the ascent measure). In Study 2, which used fictional groups, we (atypically) found no evidence for a relationship between SDO and dehumanization, or indeed for moderation by SDO. While speculative, it may be that fictional groups irrelevant to individuals' social system do not activate high SDOs' drive to maintain their social hierarchy via dehumanization, even as the general association between height and humanity continues to lead individuals in general to infer that short groups (even fictional ones) are less human. Regardless, our results for SDO are merely suggestive, and more work is needed to examine the reliability of, and reasons for, its interaction with height.

The present research opens up several avenues for future research. Further studies should test whether the link between group height and dehumanization is contingent upon the height

of one's own group. We examined White Americans, a relatively tall group. Because people show a tendency to see their in-group as particularly human (Vaes et al., 2012), it may be that perceived height predicts dehumanization of out-groups less among members of relatively short groups, as height would otherwise become a basis for self-dehumanization. Other possible boundaries could also be considered. Greater height may predict greater humanity attribution only to a certain point. As suggested by our findings for Blacks in Study 1, it is also possible that for some groups (e.g., those otherwise stereotyped as physically threatening or those on average taller than the in-group), reminders of greater height might increase physical threat and not perceived humanity (Waytz et al., 2015; Wilson et al., 2017).

The present research also contributes to an emerging literature showing that bottom-up perceptual cues such as the physical characteristics of groups can predict dehumanization (Hugenberg et al., 2016). Future research should investigate whether similar patterns are observed for other bottom-up physical markers such as body weight. Just like short individuals, overweight people are common targets of stigmatization (Puhl & Brownell, 2006) and often seen as lacking traits central to full humanity such as self-control, competence, and intelligence (Crandall, 1994; Tiggemann & Anesbury, 2000). However, whereas the effect of obesity on dehumanization likely varies cross-culturally with the degree of cultural stigmatization and status implications of being overweight, the effects of height on dehumanization might remain comparatively more stable across cultures because of the phylo- and ontogenetically stable association of height with social rank (see Thomsen et al., 2011).

In sum, work is only beginning to uncover the role of physical cues in this process, but given the consequences of dehumanization, better understanding how we come to attribute and withhold humanity to others is a pressing matter requiring more attention.

Authors' Note

J.R.K. and N.K. designed the studies. J.R.K. analyzed the data and drafted the first version of the manuscript. N.K. and L.T. provided critical revisions.

Declaration of Conflicting Interests

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Supplemental Material

The supplemental material is available in the online version of the article.

Note

1. The survey also included an exploratory measure of warmth.

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