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# The Ascent of Man: Theoretical and Empirical Evidence for Blatant Dehumanization

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# The Ascent of Man: Theoretical and Empirical Evidence for Blatant Dehumanization

## **Abstract**

Dehumanization is a central concept in the study of intergroup relations. Yet although theoretical and methodological advances in subtle, “everyday” dehumanization have progressed rapidly, blatant dehumanization remains understudied. The present research attempts to refocus theoretical and empirical attention on blatant dehumanization, examining when and why it provides explanatory power beyond subtle dehumanization. To accomplish this, we introduce and validate a blatant measure of dehumanization based on the popular depiction of evolutionary progress in the “Ascent of Man.” We compare blatant dehumanization to established conceptualizations of subtle and implicit dehumanization, including infrahumanization, perceptions of human nature and human uniqueness, and implicit associations between ingroup–outgroup and human–animal concepts. Across 7 studies conducted in 3 countries, we demonstrate that blatant dehumanization is (a) more strongly associated with individual differences in support for hierarchy than subtle or implicit dehumanization, (b) uniquely predictive of numerous consequential attitudes and behaviors toward multiple outgroup targets, (c) predictive above prejudice, and (d) reliable over time. Finally, we show that blatant—but not subtle—dehumanization spikes immediately after incidents of real intergroup violence and strongly predicts support for aggressive actions like torture and retaliatory violence (after the Boston Marathon bombings and Woolwich attacks in England). This research extends theory on the role of dehumanization in intergroup relations and intergroup conflict and provides an intuitive, validated empirical tool to reliably measure blatant dehumanization.

## **Keywords**

dehumanization, infrahumanization, intergroup relations, conflict, social dominance orientation

## **Disciplines**

Cognition and Perception | Cognitive Psychology | Communication | Community Psychology | Gender, Race, Sexuality, and Ethnicity in Communication | International and Intercultural Communication | Mass Communication | Personality and Social Contexts | Social and Behavioral Sciences | Social Influence and Political Communication | Social Psychology | Theory and Philosophy

# **The Ascent of Man: A Theoretical and Empirical Case for Blatant Dehumanization**

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## Abstract

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3 theoretical and methodological advances in subtle, ‘everyday’ dehumanization have  
4 progressed rapidly, blatant dehumanization remains understudied. The present research  
5 attempts to re-focus theoretical and empirical attention on blatant dehumanization,  
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10 dehumanization, including infrahumanization, perceptions of human nature (HN) and  
11 human uniqueness (UH), and implicit associations between ingroup/outgroup and  
12 human/animal concepts. Across seven studies conducted in three countries, we  
13 demonstrate that blatant dehumanization is: (a) more strongly associated with individual  
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16 targets; (c) predictive above prejudice; and (d) reliable over time. Finally, we show that  
17 blatant — but not subtle—dehumanization spikes immediately after incidents of real  
18 intergroup violence, and strongly predicts support for aggressive actions like torture and  
19 retaliatory violence (after the Boston Marathon bombings, and Woolwich attacks in  
20 England). This research extends theory on the role of dehumanization in intergroup  
21 relations and intergroup conflict, and provides an intuitive, validated empirical tool to  
22 reliably measure blatant dehumanization.

23

1           *“Representatives... shall be determined by adding to the whole Number of free Persons... three*  
2 *fifths of all other Persons.” - Thirteenth Amendment of the United States Constitution, amended 1868*

3           *“You have to kill the Tutsis, they're cockroaches.” - Radio Télévision Libre des Mille Collines*  
4 *broadcast prior to the Rwandan genocide, 1993*

5           *“[The Roma] are not fit to live among people. These Roma are animals and they behave like*  
6 *animals... These animals shouldn't be allowed to exist. In no way. That needs to be solved – immediately*  
7 *and regardless of the method.” - Zsolt Bayer, founder of Hungary's ruling Fidesz party, 2013*

8

9           Although legal, constitutional and biological edicts establish clear guidelines for  
10 determining whether an individual qualifies as ‘human’ or not, the psychological standard  
11 for humanness is far more fickle. Modern society provides ample evidence of people’s  
12 perception of women as sex objects (Heflick & Goldenberg, 2009; Vaes, Paladino, &  
13 Puvia, 2011), athletes as statistics (Hoberman, 1992), and inmates as numbers (Ahmad,  
14 2009; Haney, Banks, & Zimbardo, 1973). History is also replete with examples of people  
15 associating specific social groups with animals: Nazi propaganda portrayed Jews as pests,  
16 advocates of American slavery depicted African Americans as apes (Goff, Eberhardt,  
17 Williams, & Jackson, 2008), Europeans openly referred to the Romani people as  
18 ‘vermin’. The categorical denial of membership in this most basic of superordinate  
19 identities—‘human’— signals otherness in a profound way that can have dire  
20 consequences. American soldiers have highlighted the role of dehumanization in  
21 sanctioning violence in Vietnam (Boyle, 1972; Zimbardo, Maslach, & Haney, 1999), and  
22 survivors of Nazi concentration camps note the strategic value of dehumanizing one-time  
23 neighbors to enable soldiers’ engagement in mass killings (Levi, 1981). Empirical  
24 research confirms that dehumanization can facilitate discrimination (Goff et al., 2008)  
25 and aggression toward others (Bandura, Underwood, & Fromson, 1975; Leidner,

1 Castano, Zaiser, & Giner-Sorolla, 2010; Struch & Schwarz, 1989; Viki, Osgood, &  
2 Phillips, 2013).

3         As noted by Haslam and Loughnan (2014), research on dehumanization has  
4 investigated the phenomenon along a spectrum from blatant and severe to subtle and  
5 relatively mild. Pioneering work on dehumanization, influenced by the mass killings  
6 during and following the Second World War, centered on blatant dehumanization, in  
7 contexts characterized by overt conflict and hostility. This research conceptualized  
8 dehumanization as a psychological process that strips others of their group identity  
9 (Kelman, 1973), places them outside of normal moral consideration (Bandura et al.,  
10 1975; Opatow, 1990), or highlights the incongruence of ‘their’ values with ‘ours’ (Struch  
11 & Schwarz, 1989), all of which facilitate violence against the dehumanized group. Across  
12 these perspectives, blatant dehumanization was characterized as overt and aggressive.  
13 Although mostly theoretical, this early work did provide limited empirical evidence  
14 supporting the role of dehumanization in violence. For example, in one study,  
15 participants serving as ‘teachers’ in a remote learning paradigm delivered stronger shocks  
16 to groups of ‘students’ if the experimenter had earlier described the group in  
17 dehumanizing terms (Bandura et al., 1975). However, neither this early research nor more  
18 recent work on blatant dehumanization (e.g., Bandura, Barbaranelli, Caprara, &  
19 Pastorelli, 1996; Jackson & Gaertner, 2010) has systematically explored this construct  
20 across a range of research contexts. As such, the causes, consequences and scope of  
21 blatant dehumanization remain almost entirely unexplored.

22         On the other hand, recent conceptualizations of dehumanization have broadened  
23 the theoretical focus to more subtle expressions. This “new look” on dehumanization has

1 operationalized it as the attribution of fewer human traits, emotions, and experiences to  
2 others (other groups) than oneself (one’s ingroup). This extensive body of research has  
3 largely set aside contexts characterized by war and genocide to examine more ‘everyday’  
4 dehumanization, such as doctors’ perceptions of patients in hospital settings (Haque &  
5 Waytz, 2012) or people’s views of each other across (largely peaceful) national  
6 boundaries (Leyens et al., 2000; 2001; but see Castano & Giner-Sorolla, 2006). Among  
7 other consequences, the imbalance in research on subtle vs. blatant dehumanization  
8 means that their interrelationship “remains uncertain” (Haslam & Loughnan, 2014, p.  
9 418). For example, it is unclear how greatly these constructs differ from each other, both  
10 in terms of what psychological factors they are rooted in, and what types of attitudes and  
11 behaviors they predict. Similarly, little is known about the conditions under which the  
12 effects of blatant and subtle dehumanization converge or diverge, or the target groups for  
13 whom each might be most relevant. For example, when social conditions promote  
14 dehumanization, might blatant measures of dehumanization provide important  
15 contributions to predicting intergroup outcomes over and above any effects of subtle  
16 dehumanization?

17       Below, we describe modern research on subtle dehumanization, and characterize  
18 its advances. We then argue for the importance of examining *both* subtle and blatant  
19 dehumanization, and suggest that well-validated measurement tools of blatant  
20 dehumanization, which have heretofore been lacking, can aid its theoretical development.  
21 We put forward such a measure in the current work, and provide empirical support for the  
22 need to re-focus attention on blatant dehumanization.

### 23 **Modern measures of dehumanization**

1           The proliferation of research on subtle dehumanization originated from the  
2 introduction of ‘infracommunication’ (Leyens et al., 2000). The central finding from this  
3 program of research is that individuals frequently withhold a ‘human essence’ from  
4 outgroups by selectively denying them emotions that distinguish humans from animals  
5 (i.e. secondary emotions, like embarrassment and elation), but not emotions shared with  
6 animals (i.e. primary emotions, like fear and excitement). Importantly, this research  
7 shows that individuals attribute more of both positive (e.g., compassion) *and* negative  
8 (e.g., bitterness) secondary emotions to the ingroup relative to outgroups, suggesting that  
9 infracommunication is not merely an expression of dislike. Infracommunication has been  
10 demonstrated across various target groups (Leyens, Demoulin, Vaes, Gaunt, & Paldino,  
11 2007), including Canary Islander and Spanish perceptions of each other (Leyens et al.,  
12 2003), and French-speaking Belgian perceptions of Flemish-speaking Belgians (Cortes et  
13 al., 2005). Infracommunication is theoretically appealing because it offers a framework that  
14 highlights a subtle but meaningful tendency that may exist beyond explicit endorsement  
15 or conscious awareness (Leyens et al., 2000), and can occur across group status  
16 boundaries (Leyens et al., 2007). Infracommunication is also practically useful because it  
17 cuts across the dimension of valence and type of emotion (primary versus secondary),  
18 thus concealing the intent of the measure (i.e., rendering it a ‘subtle’ and indirect measure  
19 of dehumanization; Haslam & Loughnan, 2014).

20           Infracommunication has also been shown to have important intergroup  
21 consequences. For example, Portuguese infracommunication of Turkish people led them to  
22 perceive Turkey as a symbolic threat and predicted opposition to including Turkey as a  
23 member in the European Union (Pereira, Vala, & Leyens, 2009). Other studies have



1 shown outgroup infrahumanization to reduce acceptance of responsibility for an  
2 ingroup's past misdeeds (Castano & Giner-Sorolla, 2006), to reduce intergroup  
3 forgiveness (Tam, Hewstone, Cairns, Tausch, & Kenworthy, 2007), and to reduce  
4 acceptance of Muslim immigrants in Europe (Zimmerman, Viki, Abrams, Zebel, &  
5 Doosje, 2007). To our knowledge, only one study (using only negative emotions) has  
6 shown infrahumanization to predict (self-reported) behavior and behavioral intentions.  
7 Conducted in the aftermath of Hurricane Katrina, this study showed that Black and  
8 Latino participants attributed fewer negative secondary emotions to White (versus Black  
9 and Latino) victims of Hurricane Katrina (Cuddy, Rock, & Norton, 2007), and that  
10 attributions of negative secondary emotions predicted self-reported volunteerism and  
11 helping intentions after the hurricane.<sup>1</sup>

12         A second major conceptualization of dehumanization is the Dual Model of  
13 Dehumanization (Haslam, 2006; Haslam & Loughnan, 2014), which builds on the idea of  
14 infrahumanization and expands its scope. This model posits the existence of two separate  
15 modes of dehumanization: (1) Animalistic dehumanization, which involves denying  
16 outgroups *uniquely human* (UH) traits that distinguish humans from animals (such as  
17 cognitive aptitude, refinement, and civility), and (2) Mechanistic dehumanization, which  
18 involves denying others *human nature* (HN) traits that are typical of and fundamental to  
19 humans, but not necessarily unique relative to other animals (such as warmth and  
20 emotionality). Groups denied unique humanness are likened to animals, and groups  
21 denied human nature are typically likened to inanimate objects like robots or automata

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<sup>1</sup> White participants in this study, however, did not show the typical infrahumanization pattern, instead attributing negative secondary emotions approximately equally to Black and White victims.

1 (Haslam, Bain, Douge, Lee, & Bastian, 2005). Whereas UH dehumanization has been  
2 applied to ‘animalistic’ depictions of other groups (akin to infrahumanization), HN  
3 dehumanization has been applied in the domains of medicine (Haque & Waytz, 2012),  
4 technology (Salem, Eyssel, Rohlfing, Kopp, & Koublin, 2013), and the objectification of  
5 women (Haslam & Loughnan, 2014; Heflick & Goldenberg, 2009).

6         Studies of Dual Model ‘animalistic’ and ‘mechanistic’ dehumanization are  
7 methodologically similar to infrahumanization, asking participants to evaluate how well  
8 each of a series of traits (associated with human uniqueness or human nature) describe  
9 target groups of interest (e.g., Bain, Park, Kwok & Haslam, 2009). As with  
10 infrahumanization, individuals’ levels of dehumanization are assessed indirectly through  
11 their trait attributions rather than explicitly and blatantly, and thus these two measures are  
12 also considered relatively ‘subtle’ measures of dehumanization. HN and UH forms of  
13 dehumanization have been shown to operate independently of one another, and (similar  
14 to infrahumanization), across traits of mixed valence, suggesting that they are  
15 complementary measures of dehumanization that cannot be reduced to outgroup dislike.  
16 Bain et al. (2009) found that Anglo-Australians denied ethnic Chinese human nature  
17 (HN) relative to their own group but actually rated them higher in human uniqueness  
18 (UH) than the ingroup. A few studies have looked at the ability of these two forms of  
19 dehumanization to differentially predict willingness to help outgroups: Italians  
20 animalistically (but not mechanistically) dehumanized Haitians, denying them uniquely  
21 human traits, which in turn predicted decreased willingness to help Haitian earthquake  
22 victims. On the other hand, Italians mechanistically (but not animalistically)  
23 dehumanized Japanese by denying them human nature traits, which in turn predicted

1 decreased willingness to help Japanese earthquake victims (Andrighetto, Baldissarri,  
2 Lattanzio, Loughnan, & Volpato, 2014). In the context of intergroup conflict, Leidner,  
3 Castano, and Ginges (2013) showed that mechanistic dehumanization among Palestinian  
4 and Jewish Israeli participants predicted support for punitive forms of justice, over  
5 restorative forms of justice that emphasize shared values and forgiveness, which was  
6 further associated with support for violence.

7       Beyond the infrahumanization and dual models approaches to dehumanization,  
8 other recent studies have measured dehumanization indirectly through the attribution to  
9 others of more human-specific personality characteristics (Hodson & Costello, 2007),  
10 again representing a subtle form of dehumanization. Similarly, some studies focus on the  
11 centrality of mind to conceptualizations of humanness (Epley, Waytz, & Cacioppo, 2007;  
12 Waytz, Cacioppo, & Epley, 2010), for example by showing that human beings are the  
13 only entities to which people attribute full capacities for agency (planning, thinking) and  
14 experience (feeling, emotion, desire) (Gray, Gray, & Wegner, 2007).

15       In addition to the subtle measures discussed above, a number of studies have  
16 assessed dehumanization implicitly<sup>2</sup>. Implicit Association Tests (IATs) have illustrated  
17 that people unconsciously associate secondary emotions more with their ingroup (e.g.,  
18 French-speaking Belgians) than an outgroup (e.g., Dutch-speaking Belgians; Paladino et

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<sup>2</sup> As Haslam (2013) notes, measures of dehumanization can vary across at least two orthogonal dimensions: explicit to implicit, and blatant to subtle. For example, an implicit association test (IAT) composed of positive and negative secondary emotions may be characterized as implicit/subtle, while another using words associated with humans and animals is implicit/blatant. The most common ways to measure dehumanization — infrahumanization, UH, HN — are subtle, and lie somewhere on the spectrum between implicit and explicit. Still lacking is a well-characterized way to assess blatant/explicit dehumanization, whereby individuals consciously deny a group full humanness.

1 al., 2002), and that individuals more quickly and accurately associate ingroup (vs.  
2 outgroup) names with human-related (e.g., *humanity*, *citizen*) versus animal-related (e.g.,  
3 *creature*, *wildlife*) words (Viki et al., 2006). Similarly, Saminaden, Loughnan, and  
4 Haslam (2010) showed that Australians implicitly associated images of indigenous  
5 targets with terms denoting animals and immaturity. At the same time, Saminaden et al.  
6 (2010, p. 103) concluded that, “our participants may not consciously believe that  
7 traditional people are more bestial, less human, and less fully evolved or developed in the  
8 same literal and unabashed way as early European explorers and colonialists”; this  
9 highlights the uncertainty that currently exists about the relationship between  
10 subtle/implicit and explicit/blatant dehumanization.

### 11 **Outstanding questions in the dehumanization literature**

12 Overall, subtle and implicit conceptualizations of dehumanization endow the field  
13 with a strong theoretical foundation on which to research dehumanization, and provide  
14 measures that are standardized and validated. An undoubted strength of the subtle  
15 approach to dehumanization research is its transformation of the study of dehumanization  
16 from an exclusive focus on contexts marred by conflict and extreme negativity to an  
17 ‘everyday’ social-cognitive phenomenon (Haslam, 2006; Haslam & Loughan, 2014).  
18 Nevertheless, the measures currently used may fail in their subtlety to fully capture the  
19 overt expressions of dehumanization that originally inspired the theoretical research, and  
20 that continue today: soccer fans throw bananas at black soccer players in Europe (BBC,  
21 2014), newspapers publish caricatures of president Obama as an ape (Huffington Post,  
22 2014), and leaders openly describe groups such as Arabs and the Roma using terms such  
23 as ‘mongrel’, ‘animal’ and ‘pest’ (Der Spiegel, 2013). In these cases, people express

1 dehumanization deliberately and openly, they explicitly endorse the association between  
2 the target and animal representations, and clearly communicate the view that the  
3 outgroup is *inherently inferior* to the ingroup. For these types of contexts, measuring  
4 subtle or implicit dehumanization may not be enough. Rather, a more overt and explicit  
5 measure may be required to effectively capture the dehumanization being expressed.

### 6 **A novel measure of blatant dehumanization: Ascent Dehumanization**

7 To assess our contention that blatant dehumanization is theoretically meaningful,  
8 and to complement the well-validated measures of subtle, everyday dehumanization, we  
9 introduce and validate here a measure designed to capture blatant, explicit forms of  
10 dehumanization. Our measure uses the popular graphical description of the ‘Ascent of  
11 Man’, with five silhouettes depicting the physiological and cultural evolution of humans,  
12 from early human ancestors reminiscent of modern apes, through more upright ancestors  
13 with a capacity for primitive culture (depicted by a spear over the shoulder), to ‘culturally  
14 advanced’ modern humans<sup>3</sup>; participants were asked to indicate with continuous sliders  
15 their perceptions of the ‘evolvedness’ of a number of groups listed below the image  
16 (Figure 1).

17 Practically, the Ascent measure of blatant dehumanization is brief, face-valid and  
18 intuitive, and represents the overt and direct denial of humanness required of blatant  
19 dehumanization (Haslam & Loughnan, 2014). Theoretically, Ascent captures a number of  
20 important characteristics of blatant dehumanization. The images conjure an explicit  
21 animalistic distinction (from quadrupedal hominid ancestors to bipedal modern humans),

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<sup>3</sup> Silhouettes lacked texture, detail or color in order to limit low-level association biases (e.g. between darker skinned/haired early human ancestors and modern darker-skinned ethnic groups).

1 and the image is used colloquially to highlight a salient distinction between early human  
2 ancestors and modern humans: the full realization of cognitive ability and cultural  
3 expression. These characteristics combine to make the measure inherently hierarchical,  
4 with each silhouette representing an advance – an ascent – over the previous one.

5         Given that blatant dehumanization involves openly held beliefs about the inherent  
6 inferiority of other groups relative to the ingroup, one would not expect all groups to be  
7 blatantly dehumanized: for example, it would be surprising if Americans openly  
8 perceived relatively high status and cooperative groups such as Canadians or Europeans  
9 as less *evolved* than Americans, even if they were happy to report ingroup preference  
10 relative to these outgroups. For intergroup relations of this nature, subtle dehumanization  
11 measures may well be more relevant. On the other hand, contextual factors such as low  
12 outgroup status, intergroup competition, or perceived threat may generate overt and  
13 uninhibited expressions of blatant dehumanization. For example, given the tenor of  
14 intergroup relations between Americans and Arabs/Muslims in recent decades  
15 (punctuated by the attacks of September 11, 2001, the string of U.S. led wars in the  
16 Middle East, and the rise of the Islamic extremist group ‘ISIS’), and the historical  
17 negative representation of Arabs and Muslims in American media (Shaheen, 2003), it  
18 seems reasonable to expect that Americans may overtly perceive and explicitly express  
19 blatant dehumanization of Arabs and Muslims. Given the potential role for  
20 dehumanization in rationalizing intergroup aggression (Bandura et al., 1996), licensing  
21 violence (Dovidio, Kawakami, & Gaertner, 2002; Wilson, Lindsey, & Schooler, 2000)  
22 and further entrenching intractable conflicts (Bar-Tal, 2000), it seems particularly

1 important to carefully examine what role blatant versus subtle expressions of  
2 dehumanization play in the context of intergroup conflict.

3 In the present work, we empirically examine blatant dehumanization, primarily  
4 using the novel Ascent dehumanization measure. Across studies, we also include subtle  
5 and implicit measures of dehumanization to allow direct, within-subject comparison  
6 across these constructs. Using a number of participant pools and target groups, we tested  
7 three main predictions about blatant (versus subtle) dehumanization.

8 First, we predicted that blatant dehumanization would more strongly associate  
9 with explicit beliefs about the inherent superiority of some groups over others than would  
10 subtle/implicit indices of dehumanization. To test this hypothesis, we determined how  
11 well blatant versus subtle measures of dehumanization are associated with social  
12 dominance orientation (SDO), an individual difference measure that indexes support for  
13 hierarchy between social groups (Pratto, Sidanius, Stallworth, & Malle, 1994). Some  
14 prior work has found SDO to be associated with dehumanization of others, including  
15 immigrants (Costello & Hodson, 2011), refugees (Esses, Veenvliet, Hodson, & Mihic,  
16 2008) and enemy war victims (Jackson & Gaertner, 2010; see also Haslam & Loughnan,  
17 2014). While dehumanization, broadly construed, may inherently correspond to beliefs  
18 about intergroup hierarchy, the hierarchical progression implied in the Ascent measure  
19 captures this directly. We therefore expected that blatant dehumanization as captured by  
20 Ascent would be more strongly associated with SDO than would more subtle forms of  
21 dehumanization.

22 Recent work has further distinguished between two forms of SDO: the SDO-  
23 Dominance sub-dimension (SDO-D), and the SDO-Egalitarian (SDO-E) sub-dimension

1 (Ho et al., 2012; 2015). Whereas SDO-E reflects a more subtle opposition to equality  
2 between groups and is associated with variables such as opposition to affirmative action  
3 and political conservatism, SDO-D reflects an active orientation towards enforcing  
4 hierarchy between groups, is associated with more forceful and aggressive intergroup  
5 attitudes such as support for war and punishment, and is predicted by the ‘dark triad’ of  
6 personality traits (i.e., Machiavellianism, Narcissism, and Psychopathy; Ho et al., 2015).  
7 Because SDO-D (relative to SDO-E) involves particularly active and overt perceptions of  
8 some groups as *beneath* others, we theorize that the differences in the correlation between  
9 SDO and blatant vs. subtle dehumanization would be most pronounced for SDO-D  
10 (versus SDO-E).

11         A second prediction we test is that blatant dehumanization will predict important  
12 intergroup outcomes (e.g., aggressive intergroup actions in conflictual intergroup  
13 contexts) beyond subtle measures of dehumanization. We tested this hypothesis by  
14 directly comparing the relative predictive utilities of blatant and subtle dehumanization  
15 across a range of intergroup contexts. Although the number of studies documenting  
16 ‘everyday dehumanization’ has increased in recent years, the number of studies  
17 examining the *consequences* of infrahumanization, UH/HN dehumanization, and implicit  
18 dehumanization is quite small. In fact, dehumanization is frequently assessed as a  
19 dependent variable rather than as a predictor of downstream effects (e.g., Gwinn, Judd, &  
20 Park, 2013), and behavioral outcomes are very rarely examined. Furthermore, systematic  
21 empirical comparisons *across* measures of dehumanization have not previously been  
22 performed. Providing such a comparison is one of our central aims.



1           A third prediction we tested is that the Ascent measure of blatant dehumanization  
2 would be associated with other relatively blatant measures of dehumanization. While the  
3 vast majority of studies on dehumanization over the past two decades have focused on  
4 subtle or implicit dehumanization, a few have provided measures that are somewhat more  
5 blatant. For example, Viki and colleagues (2006; 2013) used an ‘ipsative’ task, in which  
6 participants were asked to match a list of ingroup and outgroup names with human-  
7 related and animal-related words, and showed that the number of human words Christians  
8 selected for Muslim names predicted support for torture of Muslim prisoners. Bastian,  
9 Denson, and Haslam (2013) introduced relatively explicit variations of animalistic and  
10 mechanistic dehumanization, using items such as “I felt like the person in the story  
11 lacked self-restraint, like an animal” (animalistic dehumanization) and “I felt like the  
12 person in the story was mechanical and cold, like a robot” (mechanistic dehumanization).  
13 Their work showed that a scale combining these two measures of dehumanization was  
14 associated with the severity of retributive justice levied against criminal offenders. In the  
15 present work, we predicted that Ascent dehumanization would be associated with these  
16 other measures of relatively blatant dehumanization<sup>4</sup>. We also reasoned that Ascent  
17 dehumanization— given its specific allusion to evolutionary progression— might be  
18 especially associated with animalistic blatant dehumanization. Lastly, we compared the  
19 predictive utilities of the Ascent measure of blatant dehumanization and these other  
20 relatively blatant measures.

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<sup>4</sup> For other assessments of dehumanization that could be considered relatively blatant, see Esses et al. (2008), who use ratings of refugees as barbarians, and Castano and Giner-Sorolla (2006), whose dehumanization measure incorporates an item assessing support for the idea that “Native Americans were basically wild creatures before the arrival of White men.”

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## Overview of studies

In Study 1, we examine blatant dehumanization across multiple target groups among American participants, using the Ascent dehumanization measure. Additionally, we examine the association between blatant dehumanization and numerous individual difference and personality variables, including individuals' acceptance of hierarchy between groups in society (SDO; Pratto et al., 1994). In Study 2a, we assess the predictive validity of blatant dehumanization in relation to existing subtle measures of dehumanization (infracommunion, UH/HN dehumanization, and an implicit measure of dehumanization), focusing on Arabs, but including three other target groups (African Americans, Hispanic Americans, Chinese). In Study 2b, we further test the importance of blatant dehumanization of these same target groups by examining whether it uniquely predicts intergroup perceptions that are both subtler and more overt. In Studies 3a and 3b, we examine blatant vs. subtle dehumanization in the context of real-world, intergroup violence. In Study 3a, we assess whether various dehumanization measures in American participants predict punitive anti-Arab attitudes and support for intergroup aggression associated with conflict escalation in the aftermath of the Boston Marathon bombings. In Study 3b, we examine whether various dehumanization measures in British participants predict attitudes and behavior towards Muslims following the murder of British citizen Lee Rigby by two British Muslim men. In Study 4, we use a large representative sample in Hungary to examine the effects of blatant vs. subtle dehumanization of the Roma (i.e., 'gypsy') population among non-Roma Hungarians. Finally, in Study 5, we considered the interrelationship between the Ascent measure of blatant dehumanization and other

1 existing, but not fully validated, measures of dehumanization that could be considered  
2 relatively blatant: the ‘ipsative’ task developed by Viki et al. (2013), and measures of  
3 animalistic and mechanistic dehumanization used previously by Bastian et al. (2013).  
4 Focusing on American perceptions of the extremist group of Muslims known as the  
5 Islamic State in Iraq and Syria (‘ISIS’), we examine convergence and predictive validity  
6 of Ascent versus these (relatively) blatant measures of dehumanization, as well as subtle  
7 dehumanization and prejudice.

### 8 **Study 1**

9 In Study 1, we assessed two central questions: First, we used our novel Ascent  
10 measure to examine which groups, if any, Americans blatantly dehumanized. Second, we  
11 examined the relationship between blatant dehumanization and various personality and  
12 individual difference measures. We were particularly interested in social dominance  
13 orientation (SDO; Pratto et al., 1994), which has been shown previously to be associated  
14 with dehumanization (Costello & Hodson, 2011; Esses, Veenvliet, Hodson, & Mihic,  
15 2008; Jackson & Gaertner, 2010; see also Haslam & Loughnan, 2014). We hypothesized  
16 that the hierarchical differentiation inherent in the Ascent measure of blatant  
17 dehumanization would cause it to associate particularly strongly (relative to more subtle  
18 measures of dehumanization) with SDO. We further predicted that differences in the  
19 association between SDO and blatant vs. subtle dehumanization would be most  
20 pronounced for the SDO-D sub-dimension, which involves actively and overtly  
21 endorsing the superiority and dominance of some groups over others.

22 Along with SDO, we also examined right-wing authoritarianism (RWA).  
23 Individuals high on RWA tend to perceive the world as dangerous, follow social norms

1 and traditions closely, submit to authorities, and aggress against individuals who threaten  
2 norms and social order (Altemeyer, 1996). To the extent that high RWA individuals hold  
3 their own group's norms and traditions as an ideal of 'civilized' behavior, we predicted  
4 that they would be more likely to perceive groups whose social norms and traditions were  
5 distinct from their own not simply as different, but also less human (see also Jackson &  
6 Gaertner, 2010).

7 We also obtained measures from two commonly used scales that we expected  
8 would not relate to blatant outgroup dehumanization: Big Five personality traits (Costa &  
9 McCrae, 1992) and the Interpersonal Reactivity Index (Davis, 1983), which provides  
10 measures of trait empathy. A large meta-analysis of the Big Five suggests that although  
11 the personality traits Agreeableness and Openness are related to prejudice, these  
12 relationships are generally modest and are more proximally mediated by SDO and RWA,  
13 respectively (Sibley & Duckitt, 2008). Outgroup hostility's weak association with basic  
14 personality traits, relative to SDO and RWA, reflects the fact that the Big Five measures  
15 contain less specific ideological and group-relevant content than either SDO or RWA.  
16 Similarly, trait empathy is generally considered a basic personality measure that precedes  
17 and informs SDO and RWA (Bäckström & Björklund, 2007; Sibley & Duckitt, 2010; but  
18 see Sidanius et al., 2013), and has been shown to be independent of intergroup  
19 perceptions (Bruneau, Cikara and Saxe, 2015). We therefore expected the Big Five and  
20 empathy to relate not at all (or less strongly than SDO and RWA) to blatant  
21 dehumanization.

## 22 **Method**

1           **Participants.** We recruited 201 American participants through Amazon’s  
2 Mechanical Turk marketplace ( $M_{\text{age}} = 32.34$ ,  $SD = 10.60$ ; 64.7% male; 153  
3 Whites/European Americans; 16 Asian/Asian Americans; 12 Latino/Hispanic Americans;  
4 nine Black/African Americans; nine Biracial/Mixed Race; one Middle Eastern/Arab  
5 American; one Other). Participants completed a questionnaire that included the Ascent  
6 dehumanization measure towards several groups, as well as a battery of individual  
7 difference and personality inventories. Given that some of the target groups we assessed  
8 included Hispanic, Asian, and Arab groups, we excluded Asian/Asian Americans,  
9 Latino/Hispanic Americans, and Middle Eastern/Arab Americans from the analyses,  
10 leaving a total sample of 172 participants.

## 11           **Measures**

12           **Blatant Dehumanization.** We measured blatant dehumanization using the Ascent  
13 measure. The ‘Ascent of Man’ diagram was accompanied by the following instructions:  
14 “People can vary in how human-like they seem. Some people seem highly evolved  
15 whereas others seem no different than lower animals. Using the image below as a guide,  
16 indicate using the sliders how evolved you consider the average member of each group to  
17 be.”<sup>5</sup> Several groups appeared below the diagram, with a single slider bar next to each  
18 anchored at either side of the 5-silhouette ‘Ascent of Man’ image: Mexican Immigrants,

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<sup>5</sup> These instructions were adapted from similar instructions used to measure mind perception (Waytz & Young, 2012) To determine whether the instructions helped to license dehumanization ratings, we presented an independent sample of 96 American participants ( $M_{\text{age}} = 33.26$ ,  $SD = 10.46$ ; 59.4% male) with the Ascent dehumanization measure with no instructions at all. These participants reported ratings for Americans ( $M = 90.98$ ,  $SD = 16.82$ ), Europeans ( $M = 91.05$ ,  $SD = 17.35$ ) and Muslims ( $M = 77.53$ ,  $SD = 31.12$ ) that were nearly identical to those given in the presence of explicit instructions in Study 1 (all independent sample t-test  $ps > .65$ ). This suggests that blatant dehumanization ratings are independent of the instructions.

1 Arabs, Chinese people, Europeans, Americans, Icelanders, Japanese people, Swiss  
2 people, Austrians, Australians, French people, South Koreans, and Muslims (see Figure  
3 1). Responses on the continuous slider were converted to a rating from 0 (least ‘evolved’)  
4 to 100 (most ‘evolved’), and a dehumanization score was calculated by subtracting the  
5 Ascent rating of the target outgroup from the Ascent rating of the ingroup. Group  
6 presentation order was randomized across participants.

7 **Social Dominance Orientation.** To assess SDO-D (e.g. “Superior groups should  
8 dominate inferior groups”;  $\alpha = .93$ ) and SDO-E (e.g. “We should aim for increased social  
9 equality”, reverse-coded;  $\alpha = .94$ ), we used the 16-item SDO<sub>6</sub> scale (Pratto et al., 1994).  
10 Participants rated their agreement with each of the items using Likert scales ranging from  
11 1 (‘Strongly disagree’) to 5 (‘Strongly agree’). This same 5-point Likert scale was used  
12 for all measures below.

13 **Right-Wing Authoritarianism.** To assess RWA, we used 12 items taken from  
14 Altemeyer’s (1996) scale, (e.g. “Our customs and national heritage are the things that  
15 have made us great, and certain people should be made to show greater respect for them”;  
16  $\alpha = .87$ )

17 **Personality Measures.** We assessed each of the Big Five personality traits:  
18 Neuroticism (e.g. “I often feel tense and jittery”;  $\alpha = .93$ ), Extraversion (e.g. “I really  
19 enjoy talking to people”;  $\alpha = .88$ ), Agreeableness (e.g. “I generally try to be thoughtful  
20 and considerate”;  $\alpha = .84$ ), Openness to Experience (e.g. “I think it’s interesting to learn  
21 and develop new hobbies”;  $\alpha = .86$ ), and Conscientiousness (e.g. “I keep my belongings  
22 neat and clean”;  $\alpha = .90$ ) using the 60-item NEO Personality Inventory-Revised (NEO-  
23 PI-R; Costa & McCrae, 1992).

1           **Trait Empathy.** We assessed empathy using the Interpersonal Reactivity Index  
2 (Davis, 1983). Participants answered seven items for each of the four empathy subscales:  
3 fantasy (e.g. “I really get involved with the feelings of the characters in a novel”;  $\alpha =$   
4 .84), perspective taking (e.g. “I try to look at everybody’s side of a disagreement before I  
5 make a decision”;  $\alpha = .82$ ), empathic concern (e.g. “I often have tender, concerned  
6 feelings for people less fortunate than me”;  $\alpha = .89$ ), and personal distress (e.g. “When I  
7 see someone who badly needs help in an emergency, I go to pieces”;  $\alpha = .89$ ).

## 8           **Results and Discussion**

9           Participant ratings of blatant dehumanization differed significantly across the  
10 target groups (Table 1): European groups and Japanese were rated as similarly ‘evolved’  
11 to Americans, while South Korean, Chinese and Mexican immigrants were rated as  
12 significantly less evolved than Americans. Lowest on the scale were Arabs and Muslims,  
13 who were rated on average 10.6 and 14.0 points lower than Americans, respectively. Post  
14 hoc tests revealed that Arabs and Muslims were rated as significantly less evolved than  
15 all other groups (mean differences between Mexicans immigrants, the next most  
16 dehumanized group, and Arabs:  $M_{\text{difference}} = -2.76$ ,  $SD = 11.31$ ,  $t(171) = -3.20$ ,  $p = .002$ ;  
17 Muslims:  $M_{\text{difference}} = -6.08$ ,  $SD = 19.77$ ,  $t(171) = -4.03$ ,  $p < .001$ ).

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**Table 1 about here**

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22           We next calculated a ‘relative blatant dehumanization’ score for each target group  
23 by subtracting the target group Ascent rating from the American Ascent rating (i.e.,

1 higher scores reflect more outgroup dehumanization).<sup>6</sup> To assess the association between  
2 relative blatant dehumanization and SDO, RWA, and Big Five personality traits across  
3 group targets, we computed an overall relative outgroup dehumanization score by  
4 averaging relative scores across all of the group targets for which significant  
5 dehumanization was observed ( $\alpha = .88$ ). As expected, blatant dehumanization was  
6 strongly associated with SDO-D. We further observed that it was unrelated to SDO-E, a  
7 subtler index of support for hierarchy between groups (Table 2); the difference between  
8 the two correlations was significant, Steiger's  $z = 4.78, p < .001$ . Blatant dehumanization  
9 was also positively, but modestly, associated with RWA, and, unexpectedly, with  
10 extraversion (positively) and conscientiousness (negatively). None of the other  
11 personality measures or empathy subscales were associated with blatant dehumanization.

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13 **Table 2 about here**  
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16 Thus, participants in Study 1 reported that some groups were 'less evolved' than  
17 Americans, and the amount of dehumanization varied across groups: participants

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<sup>6</sup> We used a difference score to represent blatant dehumanization on the Ascent scale because we wanted to directly compare Ascent to other measures of dehumanization in subsequent studies (e.g., dehumanization IAT; inbrahumanization), which are themselves typically computed as difference scores between attributions towards the ingroup vs. outgroup. This also has the advantage of accounting for any individual differences in how the scale is generally used. However, treating blatant dehumanization exclusively as the rating of the outgroup on the Ascent scale is also a reasonable approach. When we instead calculated blatant dehumanization as an absolute score on the Ascent scale for the target outgroup, major results across all studies remained unchanged. We return to this topic in the discussion. Supplementary Tables 6a-6f include mean (absolute) Ascent ratings for each group assessed across all studies.



1 blatantly dehumanized Chinese people, South Koreans, Mexican immigrants, and,  
2 particularly, Muslims and Arabs, and rated other groups, such as Europeans, Australians,  
3 and Japanese people as equal in Ascent to Americans. These results suggest that the  
4 Ascent dehumanization measure may be especially useful for assessing blatant  
5 dehumanization towards low status or derogated targets, who may be perceived as  
6 relatively primitive or unsophisticated (see also Saminaden et al., 2010; Castano & Giner-  
7 Sorolla, 2006). Importantly, the extent of outgroup blatant dehumanization relative to  
8 Americans was significantly predicted by SDO-D, which taps individuals' notions of the  
9 acceptability of aggressive measures to maintain hierarchy between groups. This supports  
10 our hypothesis that those individuals expressing blatant dehumanization are also those  
11 more likely to accept the notion that some groups are *superior* to other groups.

## 12 **Study 2a**

13 Having established significant variance in Americans' blatant dehumanization of  
14 various outgroups, and documented a relationship between blatant dehumanization and  
15 hierarchical intergroup perceptions, we sought to compare blatant dehumanization to  
16 subtle measures of dehumanization in predicting attitudes and behavior towards  
17 derogated groups. Given that Arabs emerged as one of the most strongly dehumanized  
18 groups in Study 1, we focused in these analyses on Americans' dehumanization of Arabs.  
19 Importantly, we compared the contribution of the various measures of dehumanization of  
20 Arabs relative to Americans, while also controlling for relative *prejudice* towards Arabs.  
21 Although we expected blatant dehumanization to best predict attitudes and behavior  
22 towards groups that are likely most subject to demonization and moral exclusion, such as  
23 Arabs, we also considered several other target groups. Specifically, we assessed attitudes

1 and behavior towards African Americans, Hispanic Americans, and Chinese people.  
2 Overall, we expected blatant dehumanization to predict intergroup attitudes and behavior  
3 controlling for subtle measures of dehumanization, especially for more overt outcome  
4 measures. Finally, we were interested in assessing the reliability of the various  
5 dehumanization measures over time. To examine this, we collected data in two waves,  
6 and assessed the test-retest correlation for each of the dehumanization measures.

## 7 **Method**

8 **Participants.** We recruited 600 American participants from Amazon’s  
9 Mechanical Turk marketplace. Of these participants, 38 failed to correctly respond to a  
10 check question (“This is an attention check question, please move the slider all the way to  
11 the right.”) that was randomly distributed amongst the other survey items. This left 562  
12 American participants ( $M_{\text{age}} = 35.53$ ,  $SD = 12.18$ ; 52.6% female; 427 European  
13 Americans; 32 African Americans; 31 Hispanic Americans; 28 Asian Americans; 11  
14 Native Americans; four Arab Americans; 29 Other). Participants were randomly assigned  
15 to evaluate one of four target outgroups: Arabs, African Americans, Hispanic Americans  
16 or Chinese. We included only participants who did not belong to the ethnic/racial groups  
17 about which they were responding ( $n = 530$ ). Given our reasoning that blatant  
18 dehumanization should be most relevant in intergroup contexts marked by hostility and  
19 conflict, and consistent with Study 1’s findings that blatant dehumanization was most  
20 pronounced for Arabs, we focus our analysis below primarily on participants in the Arab

1 target condition ( $n = 130$ ). Ancillary analyses for the remaining target group conditions  
2 can be found in the Supplementary Materials (Tables 1a-3c)<sup>7</sup>.

### 3 **Measures**

#### 4 **Wave 1 Assessment.**

5 **Social Dominance Orientation.** SDO-D ( $\alpha = .91$ ) and SDO-E ( $\alpha = .93$ ) were  
6 assessed as in Study 1.

7 **Blatant Dehumanization.** Blatant dehumanization was assessed using the Ascent  
8 dehumanization measure (as in Study 1) but toward the following groups: Americans,  
9 Europeans, Arabs, Hispanic Americans, African Americans, Christians, Jews, and  
10 Muslims. We were particularly interested in Arab dehumanization, and computed a  
11 relative Ascent dehumanization score by subtracting Arab Ascent ratings from American  
12 Ascent ratings for each participant.

13 **Infrahumanization.** Secondary emotions were selected from a list of emotions  
14 that American participants rated previously (Demoulin et al., 2004) across two  
15 dimensions: (1) valence and (2) how unique they were to humans versus animals.  
16 Consistent with the proposition that infrahumanization occurs independently of valence  
17 (e.g., Haslam & Loughnan, 2014; Leyens et al., 2000), we selected six secondary  
18 emotions, balanced by valence: three positive (compassion, tenderness, hope) and three  
19 negative (bitterness, regret, and shame). Participants were asked to “Indicate how well  
20 each of the emotions below characterizes the following group” using unmarked sliders (0  
21 = ‘Not at all well’; 100 ‘Very well’). We also asked participants to respond with respect  
22 to six primary emotions, balanced by valence: three positive (happiness, pleasure, and

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<sup>7</sup> Subjects assigned to the other target group conditions received the same materials, with the relevant target group substituted in place of Arabs.

1 excitement) and three negative (sadness, pain, and rage). Participants answered the  
2 questions with respect to both Americans and Arabs. Order of emotions was randomized  
3 for each target group, as was order of the target groups. Consistent with prior research on  
4 infrahumanization (e.g., Cuddy et al., 2007), we computed the difference between  
5 average ratings for Americans versus Arabs on secondary emotions (i.e., Arab  
6 infrahumanization; descriptive statistics reported in Table 3); positive scores indicate  
7 more attribution of secondary emotions to Americans. To isolate the effect of differential  
8 attribution of secondary emotions *per se* (as opposed to attributing greater emotionality to  
9 the ingroup in general), we regressed this variable on differential attribution of primary  
10 emotions. Note that all tables present the unresidualized mean (e.g., Table 3), and use the  
11 residualized variable for all zero-order correlations and regression analyses (e.g., Tables 3  
12 and 4)<sup>8</sup>.

13 **UH and HN Dehumanization.** We assessed UH and HN trait attribution towards  
14 American and Arab targets by having participants answer, “To what extent do you think  
15 the following traits describe [Americans/Arabs], in general, as a group” for the following  
16 19 traits from Haslam and Bain (2007) using unmarked sliders (0 = ‘Not at all’; 100 =  
17 ‘To a very great extent’): ‘Ambitious’, ‘Imaginative’, ‘Passionate’, ‘Polite’, ‘Humble’,  
18 ‘Rude’, ‘Stingy’, ‘Irresponsible’, ‘Reserved’, ‘Active’, ‘Friendly’, ‘Comfortable’,  
19 ‘Uncooperative’, ‘Unemotional’, ‘Timid’, ‘Shy’, ‘Nervous’, ‘Curious’, and ‘Selfless’.  
20 These traits vary both on valence, and the extent to which they capture uniquely human  
21 versus human nature traits (Gwinn et al., 2013; Haslam & Bain, 2007). Our index of  
22 uniquely human (i.e., animalistic) dehumanization used an equal number of positive and

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<sup>8</sup> Analyses using the differential attribution of secondary emotions alone (not accounting for primary emotion attribution) yielded similar results across all studies.

1 negative traits that were high on UH ('Ambitious', 'Imaginative', 'Passionate', 'Humble',  
2 'Irresponsible', 'Reserved', 'Rude', and 'Stingy'); our index of human nature traits used  
3 an equal number of positive and negative traits that were high on HN ('Active',  
4 'Friendly', 'Ambitious', 'Imaginative', 'Shy', 'Nervous', 'Irresponsible', and  
5 'Reserved'). For each measure, we created difference scores between the attribution of  
6 the traits for Americans relative to Arabs.<sup>9</sup> Higher scores indicate greater attribution of  
7 UH and HN traits to Americans relative to Arabs (i.e., greater dehumanization of Arabs).

8       **Implicit Dehumanization.** In order to measure implicit dehumanization of Arabs  
9 vs. Americans, we used an implicit association test (IAT; Greenwald, McGhee, &  
10 Schwartz, 1998). Specifically, we followed the procedure of Viki et al. (2006) and  
11 compared how quickly participants associated Arab names (e.g. Mohammed, Omar) and  
12 American names (e.g. Bruce, Jonathan) to categories representing animals (e.g. wildlife,  
13 creature) and humans (e.g. person, citizen). An IAT d-score was generated for each  
14 participant after removing responses slower than 3000 *ms* or faster than 300 *ms*; a d-score  
15 was not computed for a participant if more than 50% of responses were removed  
16 (Greenwald McGhee, & Schwartz, 1998). This resulted in the removal of the data from  
17 30 participants (5.3%). Higher d-scores reflected a stronger Americans-Human/Arab-  
18 Animal than American-Animal/Arab-Human association (i.e., more Arab  
19 dehumanization).

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<sup>9</sup> Some of the traits ('Ambitious', 'Imaginative', 'Irresponsible', and 'Reserved') are included in both scales because they are high on *both* human nature and unique humanness (Haslam & Bain, 2007; Gwinn et al., 2013). However, conclusions reported here and in all subsequent studies are consistent when these traits are excluded and only traits that are high on one dimension and low on the other are used for the assessment of the UH and HN measures.

1           **Prejudice.** To assess prejudice, we used a feeling thermometer, which asked  
2 participants “How cold (unfavorable) or warm (favorable) do you feel towards the  
3 following groups” (Haddock, Zanna, & Esses, 1993). Ratings were made for each of the  
4 target groups used in the Ascent measure using unmarked sliders (0 = ‘Very cold’; 100 =  
5 ‘Very warm’). Prejudice was computed by subtracting Arab warmth from American  
6 warmth.

7           **Arab Immigration Support.** Our first outcome measure assessed comfort with  
8 Arab immigration into the United States, by asking participants to respond to the  
9 following:

10           Every year people from around the world apply for visas to immigrate permanently to the  
11 U.S. There are quotas that limit the number of people that can come to the U.S., based on  
12 their background. This year, there were approximately 1 million total visa applications  
13 from the groups listed below, and the number of applications from each group were  
14 approximately equal. There are a limited number of slots available, so not everybody will  
15 be awarded a visa. Indicate below what percentage of the available visas you think should  
16 be awarded to each of the groups (must total 100).”  
17

18 Participants indicated the percentage of visas to be given to each of the following groups:  
19 Arabs, East Asians, Hispanics, Africans, and Eastern Europeans. We focused analyses on  
20 the proportion of visas participants granted to Arabs.

21           **Response to Injustice.** We assessed emotional responses to an ingroup act of  
22 outgroup discrimination by presenting participants with the following story:

23           Two teenage friends— one Arab, one White— are caught shoplifting from their local  
24 corner store. The White storeowner catches the youth and calls the police to the scene.  
25 When the police arrive, the storeowner recounts the robbery, placing the majority of the  
26 blame on the Arab kid. The police take the Arab kid to the police station while the White  
27 kid is sent home.  
28

29 Participants were then asked: “How angry does this make you feel?” “How guilty does  
30 this make you feel?” “How ashamed does this make you feel?” and “How compassionate  
31 do you feel towards the Arab kid” ( $\alpha = .79$ ). Participants responded using unmarked  
32 sliders (0 = ‘Not at all’; 100 = ‘Very’).

1           **Response to Media Portrayals.** Participants were asked to watch a two-minute  
2 trailer to a documentary (“Reel Bad Arabs”; <http://www.reelbadarabs.com/>; see Shaheen,  
3 2003), which argues that Hollywood has long perpetuated a negative image of Arabs. We  
4 assessed participants’ responses to the film by asking them, “Do you believe the main  
5 idea of the film is correct,” using an unmarked slider scale (0 = ‘Not at all’; 100 = ‘Very  
6 much’).

7           **Outgroup vs. Ingroup Donation.** We assessed participants’ behavior in terms of  
8 the proportion of a \$.50 bonus they were willing to donate to an ingroup (American)  
9 versus outgroup (Arab) cause (which we did in fact donate based on participants’  
10 allocations). The ingroup cause was a relief fund for victims of the Boston Marathon  
11 bombings. The outgroup cause was a relief fund for civilian victims of drone strikes in  
12 Afghanistan and Yemen. We assessed the proportion of money participants donated to  
13 the outgroup cause.

#### 14           **Wave 2 Assessment.**

15           To assess the temporal stability of all dehumanization measures, we gave  
16 participants an opportunity to participate in a second survey four months after the first  
17 administration. We assessed all dehumanization measures as in the first wave<sup>10</sup>.

18           Of the original 562 participants, 228 completed the second wave. We focused our  
19 analyses only on participants who did not belong to one of the ethnic groups that they  
20 were evaluating (219 participants;  $M_{\text{age}} = 38.53$ ,  $SD = 12.92$ ; 51.8% female; 184

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<sup>10</sup> Although we also assessed the dependent variables in this wave, we did not conduct longitudinal predictive utility analyses. The dependent variables had, on average, very high test-retest correlations over the 4-month period, leaving very little variance to be explained by our dehumanization measures. This fact was compounded by the loss of power to detect effects resulting from the reduced sample size (due to participant attrition).

1 European Americans; 9 African Americans; 10 Hispanic Americans; 6 Asian Americans;  
2 4 Native Americans; 1 Arab American; 5 Other)<sup>11</sup>. Again, we focused our analyses on  
3 participants in the Arab target condition ( $n = 57$ ).

#### 4 **Results and Discussion**

5 Descriptive statistics and intercorrelations of all variables are reported in Table 3  
6 (for all results involving other target group conditions, see Supplementary Tables 1a-3c).  
7 Overall, all measures of dehumanization showed a clear ingroup bias, with Americans  
8 attributing more ‘humanity’ to Americans than Arabs (see Table 3). To determine how  
9 well each of the dehumanization measures predicted each outcome variable, we  
10 performed a simultaneous regression for each dependent variable, with the set of  
11 dehumanization measures as predictors (see Table 4).

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12 **Table 3 about here**

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16 The results of these analyses consistently showed the importance of blatant  
17 dehumanization: blatant dehumanization predicted support for minimizing Arab  
18 immigration, less compassionate responses to injustice experienced by an Arab target,  
19 and less money actually donated to an Arab versus American cause. Infracommunication

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<sup>11</sup> A multivariate ANOVA assessing effects of attrition indicated that there was no significant difference between those participants who completed both waves and those who completed only wave one on any of the dehumanization measures, Wilks’ Lambda  $F(5, 496) = 1.84, p = .10$ . Univariate ANOVAs suggested that across dehumanization measures, the only significant difference as a function of attrition was a small effect of having completed the second wave on reporting lower relative HN dehumanization,  $F(1, 528) = 5.45, p = .02, \eta_p^2 = .01$ .



1 predicted reduced support for Arab immigration, but did not significantly predict any of  
2 the remaining variables. HN dehumanization predicted less sympathy with the main  
3 thesis of the film documenting the negative representation of Arabs in the media (in line  
4 with theoretical expectations). On the other hand, UH dehumanization unexpectedly  
5 predicted *more* sympathy with the film trailer.<sup>12</sup> Implicit dehumanization was not a  
6 significant predictor of any of the outcome variables, after controlling for the other  
7 dehumanization measures. Importantly, the effects of Ascent dehumanization could not  
8 be reduced to outgroup dislike: for Arab immigration support and responses to injustice,  
9 Ascent contributed significant unique variance even after controlling for prejudice (see  
10 Table 4).

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12 **Table 4 about here**  
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15 Although they were not the central focus of our analyses, results from the other  
16 target groups (African Americans, Hispanic Americans, and Chinese people) suggested  
17 that blatant dehumanization was relevant even in intergroup contexts less characterized  
18 by overt hostility (see Supplementary Tables 1a-2c). Although participants registered less  
19 blatant dehumanization towards these groups versus Arabs, blatant dehumanization  
20 emerged as the strongest and most consistent dehumanization predictor of the various  
21 outcome measures. Moreover, in the African American and Hispanic American target  
22 group conditions, respectively, Ascent explained additional variance for immigration

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<sup>12</sup> Given the absence of a significant zero-order correlation between UH dehumanization and responses to media portrayal, this is best interpreted as a suppressor variable effect.

1 support and outgroup vs. ingroup donation after accounting for outgroup prejudice.  
2 Interestingly, implicit dehumanization played a more important role in predicting  
3 outcome variables for these groups than it had for Arabs, suggesting the utility of implicit  
4 dehumanization measures among target groups towards whom explicit dehumanization  
5 may not exist, or for whom social norms may discourage outright negative evaluations  
6 (Dunton & Fazio, 1997).

7 As in Study 1, we found that blatant dehumanization was numerically more  
8 strongly correlated with SDO-D ( $r = .32, p < .001$ ) than SDO-E ( $r = .25, p = .004$ ), though  
9 the difference was not significant in this sample (Steiger's  $z = 1.11, p = .27$ ). Blatant  
10 dehumanization was also numerically more strongly correlated with SDO-D than with  
11 any other dehumanization measures (infracumanization:  $r = .21, p = .02$ , Steiger's  $z =$   
12  $1.02, p = .31$ ; UH dehumanization:  $r = .02, p = .87$ , Steiger's  $z = 2.54, p = .01$ ; HN  
13 dehumanization:  $r = .15, p = .09$ , Steiger's  $z = 1.73, p = .08$ ), though the difference was  
14 only significant for UH, and marginal for HN dehumanization. Both blatant  
15 dehumanization and infracumanization were similarly associated with SDO-E (Ascent:  $r$   
16  $= .25, p = .004$ ; infracumanization:  $r = .27, p = .002$ , Steiger's  $z = .19, p = .85$ ). UH  
17 dehumanization ( $r = -.05, p = .56$ ) and HN dehumanization ( $r = .13, p = .15$ ) were not  
18 significantly associated with SDO-E.<sup>13, 14</sup>

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<sup>13</sup> It is important to note that although we theorize and find that blatant dehumanization strongly correlates with SDO, it was not redundant with SDO: the Ascent measure of blatant dehumanization alone significantly predicted all four outcome measures, and when SDO (or SDO-D and SDO-E) was included together with Ascent in these multiple regressions, Ascent continued to significantly predict all outcome measures. This general pattern was consistent across all studies, and this remained the case when RWA was also added to regressions (wherever it was assessed). For the full set of regression analyses across all studies, see Supplementary Tables 7a-e.

1           Finally, we compared the reliability of the dehumanization measures over time.  
2   The test-retest correlation was high for blatant dehumanization ( $r = .60, p < .001$ ) and  
3   relatively high for infrahumanization ( $r = .46, p < .001$ ). On the other hand, the reliability  
4   for UH ( $r = -.02, p = .88$ ) and HN ( $r = .24, p = .07$ ) was low. The test-retest correlation  
5   was similarly high for blatant dehumanization across the other target group conditions  
6   (see Supplementary Tables 3a-3c).

7           In sum, by comparing the predictive validities of Ascent and established  
8   dehumanization measures (i.e., infrahumanization, UH/HN dehumanization, and implicit  
9   dehumanization), Study 2a provides support for the utility and unique contribution of  
10   blatant dehumanization, as indexed by our Ascent measure. Consistent with Study 1, we  
11   observed that blatant dehumanization is associated with support for hierarchy between  
12   groups. Whereas (as in Study 1) blatant dehumanization was more strongly correlated  
13   with SDO-D than SDO-E, in this sample the difference was trending. The Ascent  
14   measure of blatant dehumanization also showed impressive reliability over time.

15           While Study 2a included a number of important outcome variables, it lacked the  
16   extreme outcome measures that have been linked to dehumanization in historical contexts  
17   (e.g., support for torture). For outcomes such as these, blatant dehumanization might be  
18   especially relevant. Specifically, blatant dehumanization may be particularly likely to  
19   contribute beyond subtle measures of dehumanization in predicting outcome measures  
20   that are likely to require rationalization and justification (such as support for aggressive  
21   actions; Bandura et al., 1996).

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<sup>14</sup> This pattern of correlations was generally consistent across the other target group conditions (African American, Hispanic, Chinese). Most importantly, the correlation between SDO-D and Ascent dehumanization was greater than between SDO-E and Ascent dehumanization, collapsing across target group (Steiger's  $z = 2.50, p = .01$ ).

1           Additionally, Study 2a did not include subtle outcome measures that might be  
2 better captured by infrahumanization and UH/HN dehumanization. Therefore, in Study  
3 2b we added to the dependent measures used in Study 2a an outcome measure assessing  
4 more extreme attitudes (support for aggressive militaristic policies involving the torture  
5 of Arabs), and a subtler outcome measure designed to capture aversive racism. Unlike  
6 support for aggression, aversive racism is theorized to represent negative intergroup  
7 attitudes likely held outside conscious awareness, and expressed even by those endorsing  
8 norms of egalitarianism and who reject explicit outgroup negativity (Gaertner & Dovidio,  
9 1986). For example, Dovidio and Gaertner (2000) showed that although explicit attitudes  
10 towards Blacks improved among White college students between 1989 and 1999, levels  
11 of discrimination towards an ambiguously (but not unambiguously) qualified Black job  
12 candidate remained unchanged. According to these authors, “aversive racism is expressed  
13 in ways that are not easily recognizable (by oneself, as well as others)”. Thus, given that  
14 aversive racism seems not to require overt aversion, one might expect a greater  
15 contribution from subtle forms of dehumanization (Dovidio et al., 2002). Nevertheless,  
16 there is also reason to expect blatant dehumanization to be an important predictor: as  
17 noted by Dovidio and Gartner (2000), participants higher in explicit anti-Black negativity  
18 were less likely, on average, to recommend Black candidates regardless of their  
19 qualifications. Similarly, blatant dehumanization of the outgroup may be associated with  
20 discriminatory outgroup attitudes over and above any subtle dehumanization effects.

21           A final additional outcome measure asked participants to indicate a level of  
22 monetary reparations they would support providing to an outgroup victim of ingroup  
23 injustice.

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## Study 2b

### 3 Method

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**Participants.** We recruited 725 American participants from Amazon's Mechanical Turk marketplace. Of these participants, 31 failed to correctly respond to the same attention check question used in Study 2a. This left 694 participants ( $M_{\text{age}} = 35.07$ ,  $SD = 12.29$ ; 52.6% female; 530 European Americans; 42 African Americans; 40 Hispanic Americans; 49 Asian Americans; eight Native Americans; four Arab Americans; 21 Other). Participants were randomly assigned to one of four target outgroups: Arabs, African Americans, Hispanic Americans or Chinese. We included only participants who did not belong to the ethnic/racial groups about which they were responding ( $n = 663$ ). Once again, we were primarily interested in investigating dehumanization of Arabs, given our expectation that this group would be most subject to blatant dehumanization. As such, we focus our analyses and discussion below primarily on participants in that condition ( $n = 160$ ). Analyses of the remaining target group conditions can be found in Supplementary Tables 4a-5c<sup>15</sup>.

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### Measures

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**Social Dominance Orientation.** SDO-D ( $\alpha = .90$ ) and SDO-E ( $\alpha = .93$ ) were assessed as in earlier studies.

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**Right-Wing Authoritarianism.** RWA was assessed as in Study 1 ( $\alpha = .88$ )

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**Blatant Dehumanization.** Ascent dehumanization was assessed as in Study 2a.

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<sup>15</sup> Whereas participants in the Arab target condition (as the target group of interest in our analyses) received the full complement of dependent variables, participants in the other target groups received a subset.

1           **Infrahumanization.** Infrahumanization was assessed as in Study 2a, except that  
2 ‘Optimism’ was used in place of ‘Tenderness’, ‘Guilt’ in place of ‘Shame’ and  
3 ‘Contempt’ in place of ‘Regret’ (see Albarello & Rubini, 2012).

4           **UH and HN Dehumanization.** UH and HN dehumanization were assessed as in  
5 Study 2a, with the exception that we included the full set of traits that previous research  
6 has identified as high in one dimension and low in the other (Haslam et al., 2005; Gwinn  
7 et al., 2013): UH: ‘Broadminded’, ‘Conscientious’, ‘Humble’, ‘Polite’, ‘Thorough’,  
8 ‘Disorganized’, ‘Hardhearted’, ‘Ignorant’, ‘Rude’, and ‘Stingy’; HN: ‘Active’, ‘Curious’,  
9 ‘Friendly’, ‘Helpful’, ‘Fun Loving’, ‘Impatient’, ‘Impulsive’, ‘Jealous’, ‘Nervous’, and  
10 ‘Shy’.

11           **Prejudice.** In order to assess prejudice towards Arabs, participants used  
12 unmarked sliders (0 = ‘Strongly disagree’; 100 = ‘Strongly agree’) to rate each of the  
13 following items, adapted from the Attitudes Towards Blacks scale (Brigham, 1993): “If  
14 an Arab were put in charge of me at work, I would not mind taking advice and direction  
15 from him or her” (reverse-scored), “I get very upset when I hear someone make a  
16 prejudiced comment about Arabs” (reverse-scored), “If I had a chance to introduce Arab  
17 visitors to my friends and neighbors, I would be pleased to do so” (reverse-scored), “I  
18 would not mind at all if an Arab family with about the same income and education moved  
19 in next door” (reverse-scored), and “I enjoy a funny joke about Arabs, even if some  
20 people find it offensive”. The final item was dropped due to its low item-total correlation,  
21 leaving four items ( $\alpha = .85$ ).

22           **Arab Immigration Support.** Support for Arab immigration was assessed as in  
23 Study 2a.

1           **Responses to Injustice.** Participants read a story (see Appendix) about  
2 Mohammed Jamaluddin, an Arab man who was apprehended by American forces in  
3 Afghanistan after an anonymous tip indicated that he was an enemy combatant. Mr.  
4 Jamalludin was held for five years in Guantanamo without being formally charged, and  
5 then released due to a complete lack of evidence against him. After reading the story,  
6 participants were asked to answer the following questions: “As an American, how angry  
7 does this make you feel?”, “As an American, how guilty does this make you feel?”, “As  
8 an American, how ashamed does this make you feel?”, and “How compassionate do you  
9 feel towards Mohammed?” ( $\alpha = .87$ ). Participants answered on an unmarked slider scale  
10 (0 = ‘Not at all’; 100 = ‘Very’).

11           **Compensation for Injustice.** After reading the story described above,  
12 participants were asked, “How much compensation, if any, do you think Mohammed  
13 should receive from the U.S. tax payers (through the government) for damages?”  
14 Participants were asked to give a number ranging from \$0 - \$10,000,000.

15           **Response to Media Portrayals.** This construct was assessed as in Study 2a.

16           **Militaristic counter-terrorism.** We assessed extreme outgroup hostility by  
17 having participants register their support for the following aggressive counter-terrorism  
18 tactics using unmarked sliders (0 = ‘Completely disagree’; 100 = ‘Completely agree’):  
19 “Use ‘enhanced interrogation techniques’”, “Use torture”, “Use waterboarding”, “Target  
20 civilians and combatants alike in the Middle East”, and “Bomb an entire country if it is  
21 known to harbor anti-American terrorists” ( $\alpha = .89$ ).

22           **Aversive Racism.** To assess subtle prejudice (Gaertner & Dovidio, 1986) we  
23 obtained participant judgments about an ambiguously qualified Arab judge who was

1 being considered for a position on a state Supreme Court (see Appendix). In order to  
2 create the ambiguity central to the aversive racism construct, the judge was described as  
3 competent, but also subject to negative allegations (i.e., spousal abuse and nepotism), for  
4 which he had been cleared. Participants were then asked to rate the judge’s “moral  
5 character”, “ability to be a fair and impartial judge”, and “thoughtfulness and  
6 intelligence” using unmarked sliders (0 = ‘Very weak’; 100 = ‘Very strong’). Lastly,  
7 participants were asked, “Overall, how strongly do you oppose or support the Judge’s  
8 confirmation as a state Supreme Court judge?” (0 = ‘Strongly oppose’; 100 = ‘Strongly  
9 support’). Items were all reverse scored such that higher scores indicated greater aversive  
10 racism ( $\alpha = .93$ ).

11 **Outgroup Donation.** Unlike in Study 2a, participants were not forced to  
12 distribute a bonus between an ingroup and an outgroup cause. Rather, participants were  
13 given \$1.00 in bonus money, and given the opportunity to distribute any amount of it  
14 (\$0.00 to \$1.00) to a relief fund for civilian victims of drone strikes in Afghanistan and  
15 Yemen, which they were promised would be sent; participants were told that whatever  
16 they did not donate would be given to them as a bonus (which they received).

## 17 **Results and Discussion**

18 Descriptive statistics and intercorrelations of all variables are reported in Table 5.  
19 Once again, a clear ingroup bias emerged, with Americans attributing significantly more  
20 ‘humanity’ to Americans than Arabs across all dehumanization measures (see Table 5).  
21 To determine how well each dehumanization measure predicted each outcome variable,  
22 we performed a series of simultaneous regressions across all dependent variables, with  
23 the set of dehumanization measures as predictors (see Table 6).

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**Tables 5 and 6 about here**

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Consistent with Study 2a, blatant dehumanization was associated with consequential intergroup outcomes, predicting all seven dependent variables to a significant or marginally significant degree. For immigration support, compensation for injustice, aversive racism, and outgroup donation measures, Ascent remained a significant or marginally significant predictor even after controlling for prejudice. Infracumanization was a significant predictor of three of the seven dependent variables (compensation for injustice, responses to media portrayals, and outgroup donations), and this pattern held after controlling for prejudice (though its effect on outgroup donations became marginally significant). Infracumanization was further significantly associated with *less* aversive racism, but given the absence of significant zero-order correlation between infracumanization and aversive racism, this is best interpreted as a suppressor variable effect. As in Study 2a, UH and HN dehumanization did not generally contribute uniquely to the prediction of our dependent variables when the other dehumanization measures were taken into account: the only outcome significantly predicted by HN dehumanization was resistance to Arab immigration, though this effect was not significant after controlling for prejudice (see Table 6).

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Although they were not our primary focus, the results involving the other target groups (African Americans, Hispanic Americans, and Chinese people) again suggested

1 the predictive utility of blatant dehumanization even outside of actively and overtly  
2 hostile intergroup contexts (see Supplementary Tables 4a-5c). For African American  
3 targets, blatant dehumanization predicted reduced support for African immigration, less  
4 anger, guilt and shame in response to injustice (wrongful incarceration), and less  
5 sympathetic responses to negative media portrayals; for Hispanic American targets,  
6 blatant dehumanization predicted less support for Hispanic immigration, and greater  
7 aversive racism; and for Chinese targets, blatant dehumanization predicted lower  
8 donations made to a Chinese charity. Moreover, the effects of blatant dehumanization on  
9 responses to media portrayals in the African American condition, aversive racism in the  
10 Hispanic American condition, and outgroup donation in the Chinese condition remained  
11 significant even after controlling for prejudice towards these groups.

12 In Study 2b, we again assessed the association between dehumanization measures  
13 and SDO-D, SDO-E and RWA. Similar to Study 2a, blatant dehumanization was more  
14 highly correlated with SDO-D ( $r = .26, p = .001$ ) than with SDO-E ( $r = .11, p = .17$ ;  
15 Steiger's  $z = 2.41, p = .02$ ). Blatant dehumanization was also numerically more strongly  
16 associated with SDO-D than were the other dehumanization measures  
17 (infracumanization:  $r = .11, p = .17$ , Steiger's  $z = 1.50, p = .13$ ; UH dehumanization:  $r =$   
18  $.12, p = .12$ , Steiger's  $z = 1.27, p = .20$ ; HN dehumanization:  $r = .05, p = .52$ ; Steiger's  $z$   
19  $= 2.03, p = .04$ ), although this difference was only significant for HN dehumanization  
20 and trending for infracumanization. SDO-E was weakly correlated with  
21 infracumanization ( $r = .17, p = .04$ ) and uncorrelated with UH and HN dehumanization  
22 (UH:  $r = .03, p = .74$ ; HN:  $r = .03, p = .67$ ). RWA was significantly associated with both

1 blatant dehumanization ( $r = .17, p = .03$ ) and infrahumanization ( $r = .22, p = .005$ ), but  
2 not UH ( $r = .10, p = .20$ ) or HN dehumanization ( $r = .03, p = .73$ ).<sup>16</sup>

3 In sum, the results of Study 2b replicated and extended those of Study 2a. In  
4 addition to predicting the same outcome measures used in Study 2a, blatant  
5 dehumanization predicted militaristic counter-terrorism, which included items that could  
6 readily escalate intergroup conflict, such as lack of concern for civilian casualties and  
7 vengeance (bombing a country in response to an individual act of terrorism). We  
8 reasoned that blatant dehumanization might be more predictive than subtle  
9 dehumanization of such actions given that they would seem to require the type of  
10 rationalizations or justifications that would particularly ‘benefit’ from an explicit denial  
11 of outgroup humanity. As expected, blatant dehumanization was the strongest predictor  
12 of this variable among the dehumanization measures. Also included in this study was  
13 aversive racism, a subtle measure of prejudice that we thought might be uniquely  
14 predicted by more subtle forms of dehumanization, with blatant dehumanization  
15 potentially providing additional utility. In fact, blatant dehumanization predicted aversive  
16 racism more strongly than the other dehumanization measures. Although it is possible  
17 that an even more subtle outcome measure would be predicted exclusively by subtle  
18 dehumanization, this result speaks to the potency of blatant dehumanization. Finally,

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<sup>16</sup> Across all of the remaining target group conditions, blatant dehumanization was also more correlated with SDO-D ( $r = .34, p < .001$ ) than with SDO-E ( $r = .18, p < .001$ ; Steiger’s  $z = 4.69, p < .001$ ). Moreover, of all the dehumanization measures, blatant dehumanization was the most strongly correlated with SDO-D (infrahumanization:  $r = .07, p = .10$ ; UH:  $r = -.01, p = .92$ ; HN:  $r = .07, p = .11$ ; Steiger’s  $z$ s  $> 4.67, ps < .001$ ). Blatant dehumanization was also significantly correlated with RWA across target group conditions ( $r = .27, p < .001$ ).

1 replicating the results of Studies 1 and 2a, blatant dehumanization in Study 2b was  
2 associated with the more overt and aggressive dimension of SDO, as well as with RWA.

3         Although Studies 2a and 2b illustrated the theoretical importance and predictive  
4 utility of blatant dehumanization, we considered it important to examine its effects under  
5 conditions approximating those that inspired the original dehumanization research:  
6 following acts of violence targeted at the ingroup. When the ingroup faces such threats,  
7 one might expect greater levels of dehumanization and moral disengagement, which  
8 enable responses such as retaliatory aggression (Bandura et al., 1975; Bar-Tal, 2000;  
9 Kelman, 1973; Opatow, 1990). In Study 3a, we assessed dehumanization among  
10 American participants in the days immediately following the Boston Marathon bombings,  
11 when many presumed Arab and/or Muslim groups to be responsible. In Study 3b, we  
12 assessed British participants' dehumanization of Muslims in a similar context: the  
13 immediate aftermath of the gruesome murder of a British soldier (Lee Rigby) by two  
14 British Muslims.

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### **Study 3a**

17         Studies 1 and 2 support the utility of blatant dehumanization for predicting Arab  
18 attitudes and behavior even during periods of relatively calm intergroup relations. In  
19 Study 3a, we examined blatant dehumanization in the immediate aftermath of a highly  
20 salient real-world event: the Boston Marathon bombings. The bombings, which took  
21 place on April 15, 2013, were the largest terrorist attack on American soil since  
22 September 11<sup>th</sup>, 2001, and gripped the nation's attention for months thereafter.  
23 Particularly in the immediate aftermath of the incident, many speculated about whether

1 the attackers were likely to be Arab or Muslim. Indicative of the prevailing atmosphere at  
2 the time, the New York Post released a photo of a dark-skinned 17-year old later  
3 identified as Salah Barhoun, an American of Moroccan origin, as a potential suspect  
4 under the headline “Bag Men” (he was later cleared of any wrongdoing). A Bangladeshi  
5 man also claimed to have been beaten in a ‘revenge attack’ in the Bronx, New York, with  
6 the attackers (incorrectly) shouting expletives about his Arab background (Daily Mail,  
7 2013). Study 3a therefore provided a naturalistic experiment in which to examine  
8 dehumanization toward Arabs in this context.

9         Study 3a allowed us to test two specific predictions. First, we expected that  
10 blatant dehumanization of Arabs relative to Americans would spike immediately after an  
11 act of violence perpetrated by an outgroup. Against the backdrop of a threatening attack  
12 on the ingroup, we expected individuals to ascribe more humanity to their ingroup  
13 relative to the enemy outgroup, reflected by increases in blatant dehumanization on the  
14 Ascent scale. Given that subtle indices of dehumanization do not capture the type of  
15 direct and explicit denial of humanness that might prevail in the aftermath of aggression  
16 targeted at the ingroup (Haslam & Loughnan, 2014), we reasoned that subtle  
17 dehumanization of Arabs might be less likely to increase immediately after an attack.

18         Second, we expected that blatant dehumanization in this setting might be  
19 particularly effective at predicting conflict-escalating attitudes, such as support for  
20 violent reprisals and lack of concern for outgroup civilian casualties<sup>17</sup>.

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<sup>17</sup> Although not all Arabs are Muslim and not all Muslims are Arab, these two categories are strongly associated in the United States, and frequently treated as interchangeable. In this study, our dehumanization measures were assessed with respect to Arabs whereas some of our dependent variables referred to Muslims. In Study 3b, both our dehumanization measures and dependent variables referred to Muslims specifically.

1           We collected data for Study 3a in the direct aftermath of the Boston Marathon  
2 attacks across two waves. The dependent measures of interest for our current purposes  
3 were included in the second wave, and thus we focus our analyses primarily on the data  
4 in this wave. To determine whether blatant dehumanization was greater immediately  
5 proximal to the attacks, as opposed to either before or long after, we compared Ascent  
6 dehumanization in Study 3a to Ascent dehumanization in Studies 2a and 2b (collected  
7 about six months after the attacks), and to Ascent dehumanization data collected in two  
8 pilot studies conducted about two months prior to the attacks. Each pilot study assessed  
9 blatant dehumanization using the same Ascent dehumanization measure used in Studies 1  
10 and 2.

## 11   **Method**

12           **Participants.** On April 18<sup>th</sup> (three days after the attacks), we collected data from  
13 574 American participants using Amazon’s Mechanical Turk platform. We collected a  
14 second wave of survey data, launched on April 26<sup>th</sup> 2013 and terminated on May 1<sup>st</sup>,  
15 2013 (11-16 days after the attack, by which point the identities of Dzhokhar and  
16 Tamerlan Tsarnaev were clear), from 348 (60.6%) of these participants ( $M_{\text{age}} = 33.16$ ,  $SD$   
17  $= 11.03$ , 53.2% female; 278 White; 24 Asian/Asian American; 21 Black/African  
18 American; 14 Hispanic/Latino American; six Biracial; three Arab/Arab American; one  
19 Native American; one Other). We excluded the three Arab/Arab American participants  
20 from analyses.

## 21   **Measures**

22           The following measures were taken from a larger survey intended to assess a  
23 variety of unrelated research questions in addition to the questions of interest here (see

1 Kteily, Cotterill, Sidanius, Sheehy-Skeffington, & Bergh, 2014, for the full set of  
2 variables). We focus below on the variables of relevance to the current study.

3 **Wave 1 assessment.**

4 **Social Dominance Orientation and Right-Wing Authoritarianism.** SDO-D ( $\alpha$   
5 = .87) and SDO-E ( $\alpha$  = .86) were assessed using a random half of the items used in  
6 Studies 1-2b. RWA ( $\alpha$  = .88) was assessed using the same items as in studies 1 and 2b.  
7 Responses were indicated on 7-point Likert scales (1 = ‘Not at all’, 7 = ‘Very much so’).

8 **Responsibility for bombings.** We assessed the extent to which participants felt  
9 the Boston Marathon bombings were conducted by Muslims by asking the following  
10 question: “How likely do you think it is that this [Boston Marathon bombings] was an act  
11 of Islamic terrorism?” (1 = ‘Not at all’, 7 = ‘Very much so’).

12 **Wave 2 assessment.**<sup>18</sup>

13 **Blatant Dehumanization.** Ascent dehumanization of Americans versus Arabs  
14 was assessed as in previous studies.

15 **Infrahumanization, UH and HN dehumanization.** Infrahumanization, UH and  
16 HN dehumanization of Arabs (versus Americans) were assessed as in Studies 2a and 2b,  
17 with one minor modification to the instructions: “To what extent do you think  
18 [Americans/Arabs], as a group, in general feel the following emotions” (1 = ‘Not at all’, 7  
19 = ‘Very much so’).

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<sup>18</sup> At the end of Wave 1, participants were asked to read a text that served as an experimental manipulation for purposes unrelated to the current study. In one condition, participants read a text arguing that Americans should consider the effects of America’s own policies on the world rather than only considering the costs of terrorism to Americans. In a second condition, participants read a text arguing that America was facing increasing threats to its security. In a third condition, participants read no text. In order to control for any effects of experimental condition, we residualized all Wave 2 variables on condition before entering them into our regressions.

1           **Perceived Outgroup Threat.** Perceptions of Arab threat were assessed using six  
2 items ( $\alpha = .94$ ), adapted from Integrated Threat Theory (Stephan & Stephan, 2000; see  
3 Appendix; sample item: “Arabs, as a group, pose a threat to other Americans”).  
4 Responses were made on 7-point Likert scales (1 = ‘Strongly disagree’, 7 = ‘Strongly  
5 agree’).

6           **Arab Immigration Support.** Support for Arab immigration was assessed as in  
7 previous studies.

8           **Drone Strike Support.** Support for the use of drone strikes was assessed by  
9 asking participants to rate their agreement (1 = ‘Strongly disagree’; 7 = ‘Strongly agree’)  
10 with four items associated with the U.S. drone program (see Appendix; sample item: “I  
11 support America’s use of drone attacks against suspected militant targets in Pakistan and  
12 Afghanistan”;  $\alpha = .86$ ).

13           **Militaristic Counter-terrorism.** Participants’ support for militaristic and  
14 aggressive policies intended to counter terrorism was measured by asking participants to  
15 rate their agreement (1 = ‘Strongly disagree’; 7 = ‘Strongly agree’) with each of eleven  
16 items (see Appendix; sample items: “To put an end to terrorist acts, I think it is OK to use  
17 torture”, “To put an end to terrorist acts, I think it is OK to target civilians and  
18 combatants alike in foreign terrorist strongholds”;  $\alpha = .92$ ).

19           **Outgroup Sympathy.** To measure participant sympathy towards Arabs and  
20 Muslims, participants’ rated their agreement (1 = ‘Strongly disagree’; 7 = ‘Strongly  
21 agree’) with the following item, taken from a Twitter post that became popular in the  
22 aftermath of the Boston Marathon attacks: “I’m all for us all being Bostonians today. But  
23 can we all be Yemenis or Pakistanis tomorrow?”



1           **Support for Vengeance.** To measure support for extreme outgroup aggression  
2    avenging the bombings, we asked participants to indicate their agreement (1 = ‘Strongly  
3    disagree’; 7 = ‘Strongly agree’) from the following statement adapted from a Twitter post  
4    popularized in the aftermath of the attacks: “Muslims bombed Boston. We as a planet  
5    need to wipe them off this world. Every one of them.”

## 6    **Results and Discussion**

7           Descriptive statistics and inter-correlations of all variables are presented in Table  
8    7. Similar to Studies 2a and 2b, Americans dehumanized Arabs on all measures.

9           Based on the hypothesized role of intergroup conflict in increasing  
10   dehumanization (Bandura et al., 1996), our first specific prediction of Study 3a was that  
11   dehumanization of Arabs relative to Americans would spike in the aftermath of a  
12   threatening event, like the Boston Marathon bombings. To assess this, we compared  
13   blatant dehumanization immediately after the Boston Marathon bombings to blatant  
14   dehumanization obtained in two pilot studies two months prior to the attacks ( $n = 212$  and  
15    $n = 208$ , respectively) and two samples obtained six months after the attacks, in Studies 2a  
16   and 2b (see Figure 2).

17           Consistent with our prediction, Ascent dehumanization of Arabs relative to  
18   Americans was significantly greater immediately after the Boston Marathon bombings  
19   ( $M = 15.58$ ,  $SD = 25.43$ ) than it was both two months prior to the bombings ( $M = 10.77$ ,  
20    $SD = 23.44$ ;  $F(1, 753) = 7.27$ ,  $p = .007$ ,  $\eta_p^2 = .01$ ), and six months after the bombings ( $M$   
21    $= 10.14$ ,  $SD = 21.99$ ;  $F(1, 623) = 8.06$ ,  $p = .005$ ,  $\eta_p^2 = .013$ ). Moreover, the more

1 participants perceived that the attacks were acts of Islamic terrorism, the greater their  
2 levels of blatant dehumanization of Arabs vs. Americans,  $r = .36, p < .001$ <sup>19</sup>.

3 Interestingly, increased dehumanization following the Boston Marathon bombings  
4 was restricted to blatant dehumanization: infrahumanization levels were not significantly  
5 different in the direct aftermath of the attacks relative to the pilot data collected two  
6 months before the attack,  $F(1, 541) < 1$ ,<sup>20</sup> and the data collected six months afterwards,  
7  $F(1, 623) = 2.08, p = .15$ <sup>21</sup>, and levels of UH ( $F(1, 463) = 2.19, p = .14$ )<sup>22</sup> and HN ( $F(1,$   
8  $463) < 1$ ) dehumanization were similar immediately after the attacks, relative to  
9 six months later.<sup>23</sup> One possible explanation for this pattern of data is that threats to the  
10 ingroup might provoke conscious and overt dehumanization, which explicit/blatant  
11 measures of dehumanization may be better positioned to quickly register than more  
12 indirect measures.

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<sup>19</sup> While the overall increase in blatant dehumanization reflected increased average Ascent ratings of Americans more than decreased Ascent ratings of Arabs, those who perceived the act as the responsibility of Islamic terrorists specifically denied Arabs humanity ( $r = -.33, p < .001$ ) as opposed to bolstering American humanity on the Ascent scale ( $r = -.03, p = .57$ ). On the other hand, attributing the attacks to Islamic terrorism was not associated with either subtly dehumanizing Arabs (UH:  $r = -.05, p = .40$ ; HN:  $r = .08, p = .15$ ; infrahumanization:  $r = .10, p = .06$ ), or bolstering American humanity (UH:  $r = .05, p = .33$ ; HN:  $r = .08, p = .15$ ; infrahumanization:  $r = .10, p = .06$ ).

<sup>20</sup> Infrahumanization measures appeared only in our second pilot study, and thus the pilot data described here includes only that sample. Because the infrahumanization and UH/HN measures were not all assessed on a 0-100 scale, they were transformed into 0-100 scores using the “percentage of maximum possible” technique for purposes of comparison (see Cohen, Cohen, Aiken, & West, 1999).

<sup>21</sup> Because the mean of residualized variables is 0, here, we used the measures of infrahumanization that were not residualized on primary emotions.

<sup>22</sup> Indeed, although this was not significant, the slight trend was towards *lower* UH dehumanization in the aftermath of the Boston attacks relative to six months later.

<sup>23</sup> Because UH and HN dehumanization were assessed using different traits in Study 2b, we restricted our comparison for these variables to the Study 2a and Study 3a samples.

1 **Tables 7 and 8 about here**

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4 A second prediction of Study 3a was that Ascent dehumanization would strongly  
5 predict support for extreme attitudes and social policies following the attacks. As in  
6 Studies 2a and 2b, we included each of the dehumanization measures as a predictor in a  
7 series of regressions. Ascent again emerged as the strongest and most consistent predictor  
8 of a range of outcome measures. Replicating Studies 2a and 2b, Ascent dehumanization  
9 was the strongest predictor of reduced support for Arab immigration. Ascent also  
10 significantly predicted a variety of attitudes that could escalate intergroup violence:  
11 decreased outgroup sympathy, support for vengeance, and support for drone strikes and  
12 militaristic counter-terrorism (see Table 8; Viki et al., 2013). With the exception of  
13 support for drone strikes, the effects of Ascent dehumanization were significant even  
14 after controlling for Americans' perceived sense of realistic and symbolic Arab threat.  
15 Particularly striking was the very strong association ( $\beta = .51, p < 0.001$ ) between Ascent  
16 dehumanization and support for vengeance (agreement with the tweet suggesting that all  
17 Muslims should be wiped off the face of the earth).

18 Despite this event representing an extreme intergroup situation that may drive  
19 more overt and explicit expressions of intergroup bias, two of the subtle dehumanization  
20 measures also predicted unique variance among some of the outcome measures.  
21 Infracumanization was a significant or marginally significant unique predictor of all the  
22 dependent variables except vengeance, although after controlling for outgroup threat,  
23 infracumanization only predicted support for militaristic counter-terrorism. HN

1 dehumanization significantly predicted all dependent variables, although its prediction of  
2 reduced support for Arab immigration was not significant controlling for outgroup threat.  
3 On the other hand, UH dehumanization predicted drone support, militaristic counter-  
4 terrorism, and vengeance, but in all cases, the effects were in the unpredicted direction  
5 (with greater UH dehumanization predicting *less* hostility)<sup>24</sup>.

6 Finally, we assessed the relationship between SDO and RWA and each of the  
7 dehumanization measures. Consistent with the patterns in Studies 2a and 2b, the  
8 correlation between SDO-D and Ascent ( $r = .43, p < .001$ ) was significantly higher than  
9 the correlation between SDO-E and Ascent ( $r = .34, p < .001$ ; Steiger's  $z = 2.06, p = .04$ ).  
10 The correlation between SDO-D and Ascent was also significantly higher than the  
11 correlation between SDO-D and each of the other dehumanization measures  
12 (infracommunitarianization:  $r = .01, p = .80$ , Steiger's  $z = 6.85, p < .001$ ; UH:  $r = .01, p = .93$ ,  
13 Steiger's  $z = 6.71, p < .001$ ; HN:  $r = .08, p = .13$ ; Steiger's  $z = 6.17, p < .001$ ). SDO-E  
14 was correlated with Ascent ( $r = .34, p < .001$ ), infracommunitarianization ( $r = .12, p = .03$ ), and  
15 HN ( $r = .21, p < .001$ ), but not UH ( $r = .09, p = .09$ ). Consistent with Study 2b, Ascent  
16 was also significantly correlated with RWA ( $r = .47, p < .001$ ). RWA was also associated  
17 with the other dehumanization measures (infracommunitarianization:  $r = .30, p < .001$ ; UH:  $r =$   
18  $.18, p < .001$ ; HN:  $r = .28, p < .001$ ).

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### Study 3b

21 A few weeks after the Boston Marathon attacks, a tragic incident in Woolwich,  
22 U.K. provided another opportunity to test our predictions against the backdrop of a

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<sup>24</sup> Given the absence of significant zero-order correlations between UH dehumanization and these variables, these effects should be considered suppressor variable effects.

1 salient real-world event. On 22<sup>nd</sup> May 2013, Michael Adebolajo and Michael Adebowale  
2 murdered a British Army soldier, Lee Rigby, in broad daylight. The suspects were both  
3 born and raised in Britain by families of Christian Nigerian origin, but had converted to  
4 Islam and claimed that their attacks were religiously inspired. In the aftermath of these  
5 attacks, we assessed Muslim dehumanization using Ascent, infrahumanization, UH, HN,  
6 and investigated how well each of these measures predicted negative and aggressive  
7 attitudes towards Muslims.

## 8 **Method**

9 **Participants.** Data were collected, using Qualtrics' Panel service, from 179  
10 participants between May 24, 2013 and May 27, 2013 (2-5 days after the attack). Because  
11 we were interested in assessing Muslim dehumanization among British people, we used  
12 data only from participants who indicated that they were non-Muslim citizens of Britain  
13 ( $n = 128$ ; 50.0% female;  $M_{\text{age}} = 41.10$ ,  $SD = 14.99$ ; 112 White; six African/Black; three  
14 South Asian; one East Asian; one (non-Muslim) Middle Eastern; one Mediterranean;  
15 three Other).

## 16 **Measures**

17 **Social Dominance Orientation and Right-Wing Authoritarianism.** SDO-D ( $\alpha$   
18 = .81) and SDO-E ( $\alpha = .78$ ) were assessed as in Study 3a. Although eight items had  
19 originally been included to assess RWA, we found that a 4-item version of the scale  
20 produced better reliability ( $\alpha = .82$ ; see Kteily et al., 2014 for further details)<sup>25</sup>.

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<sup>25</sup> As noted in Kteily et al., 2014, a clerical error resulted in some participants (37 of the 128 participants in this study) not receiving two of the RWA items used in our scale. As such, their RWA scale scores are based on the remaining half of the scale.

1           **Blatant Dehumanization.** Ascent dehumanization towards Muslims was assessed  
2 as in previous studies, but with British and Muslim as the target groups. Other groups  
3 included in the Ascent measure were: Arabs, Americans, Pakistanis, Christians, Jews,  
4 Indians, and Black people.

5           **Infrahumanization, UH/HN dehumanization.** Infrahumanization, UH and HN  
6 dehumanization were assessed as in Study 3a, but with British and Muslims (rather than  
7 Americans and Arabs) as the target groups.

8           **Prejudice.** We assessed anti-Muslim prejudice (1 = ‘Strongly disagree’; 7 =  
9 ‘Strongly agree’) using a 6-item scale (see Appendix) adapted from Pratto et al. (1994;  
10 sample item: “Most of the terrorists in the world today have a Muslim background”;  $\alpha =$   
11 .92).

12           **Drone strike support and Militaristic counter-terrorism.** We assessed support  
13 for drone strikes and militaristic counter-terrorism policies as in Study 3a, with a few  
14 minor modifications to make it relevant to a British rather than U.S. audience ( $\alpha = .80$ ).  
15 The militaristic counter-terrorism scale was similarly modified for a British audience  
16 from the scale used in Study 3a ( $\alpha = .88$ ).

17           **Outgroup individuation.** We assessed the extent to which individuals  
18 distinguished the outgroup as a whole from the specific outgroup individuals suspected of  
19 committing the Woolwich attacks. Specifically, we asked participants to indicate their  
20 agreement (1 = ‘Strongly disagree’; 7 = ‘Strongly agree’) with the following two  
21 statements tweeted in the aftermath of the attacks: “The horrific attack in Woolwich had  
22 nothing to do with Islam and everything to do with the scum who say they do this in the

1 name of Islam”, and “Islam didn’t murder the man in Woolwich. It was perverse  
2 criminals using religion to rationalize their indefensible barbarism” ( $\alpha = .88$ ).

3 **Punitiveness.** Finally, we assessed participants’ punitiveness towards the  
4 suspected Woolwich attackers using seven items (see Kteily et al., 2014), which included  
5 “I hope the perpetrators of the Woolwich attacks rot in hell” and “Imagine the U.K.  
6 reinstated the death penalty. How likely would you be to recommend the suspects be  
7 sentenced to death?” Because some of the items were measured using different response  
8 scales, we standardized all items before averaging to compute a punitiveness scale ( $\alpha =$   
9  $.86$ ).

## 10 **Results and Discussion**

11 Descriptive statistics and inter-correlations of all variables are presented in Table  
12 9. Consistent with Studies 2a, 2b and 3a, we observed significant dehumanization of  
13 Muslims on all measures. In fact, similar to blatant Arab dehumanization by Americans  
14 following the Boston Marathon Bombings, there was substantial Ascent dehumanization  
15 of Muslims by non-Muslim British participants following the murder of Lee Rigby ( $M =$   
16  $21.00$ ,  $SD = 33.68$ ). As in previous studies, we included each of the relative  
17 dehumanization measures (Ascent, infrahumanization, UH, and HN) as predictors in  
18 separate regressions for each outcome measure (see Table 10).

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**Tables 9 and 10 about here**

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1 Consistent with Study 3a, perceptions of Muslims as less evolved (relative to  
2 British people) predicted greater aggressive attitudes and support for anti-Muslim  
3 policies. Specifically, Ascent dehumanization predicted support for drone strikes,  
4 militaristic counter-terrorism policies affecting Arabs and Muslims, punitive reactions  
5 towards the suspected perpetrators, and the perception that the attackers' actions  
6 represented Islam as a whole. As in previous studies, the effects of Ascent  
7 dehumanization could not be reduced to outgroup dislike: Ascent remained a significant  
8 predictor of all dependent variables even when anti-Muslim prejudice was controlled for,  
9 though its effect on punitiveness became marginal. In Study 3b, the more subtle indices  
10 of dehumanization more weakly predicted outcome measures than they had in Study 3a.  
11 In fact, none of infrahumanization, UH or HN dehumanization uniquely predicted any  
12 outcome measure in this study.

13 As in previous studies, we observed that the correlation between SDO-D and  
14 Ascent ( $r = .50, p < .001$ ) was higher than the correlation between SDO-E and Ascent ( $r$   
15  $= .10, p = .26$ ; Steiger's  $z = 4.20, p < .001$ ). Moreover, the relationship between SDO-D  
16 and Ascent was stronger than that between SDO-D and all other indices of  
17 dehumanization (Infrahumanization:  $r = .09, p = .32$ , Steiger's  $z = 3.57, p < .001$  ; UH:  $r$   
18  $= .22, p = .02$ , Steiger's  $z = 2.59, p = .01$ ; HN:  $r = .38, p < .001$ , Steiger's  $z = 1.17, p =$   
19  $.24$ ), although the difference was not significant for HN dehumanization. SDO-E was not  
20 significantly related to any of the other dehumanization measures (Infrahumanization:  $r =$   
21  $.14, p = .13$ ; UH:  $r = -.10, p = .29$ ; HN:  $r = .08, p = .41$ ). Finally, RWA was significantly  
22 associated with Ascent dehumanization,  $r = .27, p = .003$ , consistent with Studies 1, 2a,



1 2b and 3a. RWA was also significantly correlated with infrahumanization ( $r = .21, p =$   
2  $.02$ ), and HN ( $r = .29, p < .001$ ), and marginally correlated with UH ( $r = .17, p = .07$ ).

3 In sum, the importance of blatant dehumanization generalized to a different  
4 context, among a different population towards a different (albeit related) target group  
5 (Muslims versus Arabs).

6 In Study 4, we sought to extend our examination of the effects of blatant vs.  
7 subtle dehumanization to another social context in which we expected blatant  
8 dehumanization to be highly relevant, by assessing Hungarians' perceptions of Europe's  
9 largest minority group: the Roma, or Romani people. For centuries the Roma have been  
10 excluded from European society, and have faced extreme discrimination, culminating in  
11 the mass killing of approximately one million Roma (20% of the Roma population) by  
12 the Nazi regime in WWII. Recent years have been witness to a resurgence of anti-Roma  
13 sentiment, with internment camps in Italy, forced sterilization of Roma women in the  
14 Czech Republic, and public calls for the evacuation or extermination of the Roma by  
15 political figures in Hungary (Hungarian Media Monitor, 2013). These extreme examples  
16 punctuate a background of strong and potentially increasing discrimination across  
17 Europe, particularly in housing, healthcare and education. Since the Roma are commonly  
18 depicted as essentially primitive and unsophisticated (Jahoda, 1999), we expected to  
19 observe high levels of blatant dehumanization, and hypothesized that it would be an  
20 important predictor of discrimination and negative intergroup outcomes.

21

22

## Study 4

23 **Method**

1           **Participants.** We collected an online representative sample from Hungary using a  
2 collection service (Solid Data SIA). Of the 1,002 survey respondents, 12 identified as  
3 Roma, and 84 answered (at least) one of three attention checks embedded within the  
4 survey incorrectly; all these participants were excluded, leaving 906 participants (*M* age=  
5 42.04, *SD* = 12.75; 50.7% male).

## 6 **Measures**

7           **Social Dominance Orientation.** SDO-D ( $\alpha = .86$ ) was assessed as in Study 3a.  
8 Participants responded using a 5-item scale (1= ‘Completely Disagree’; 5= ‘Completely  
9 Agree’). SDO-E was not assessed in this study.

10           **Blatant Dehumanization.** Ascent dehumanization towards the Roma was  
11 assessed, as in previous studies, as a difference score between Hungarians and the Roma.  
12 Other groups included in the Ascent measure were: the homeless,  
13 lesbians/gays/bisexuals/transgender individual (LGBT), Transylvanians, Jews, Muslims,  
14 and the countryside population. Participant ratings were made using a 0-10 scale; we  
15 multiplied scores by 10 to allow comparison across studies.

16           **Infrahumanization/UH/HN Dehumanization.** Infrahumanization was assessed  
17 as in study 2b, but with respect to Hungarians and the Roma. Participants were asked to  
18 “Please indicate how typical each of the following emotions are for the groups below”  
19 using a 0-10 scale (0 = ‘not typical at all’; 10 = ‘very typical’). As with Ascent  
20 dehumanization, scores were multiplied by 10 for ease of comparison across studies.  
21 UH/HN dehumanization was not assessed in this study.

22           **Prejudice.** We assessed prejudice as in study 2a (i.e., using feeling  
23 thermometers), with Hungarians and the Roma as target groups of interest. Participants

1 provided responses on a 0-10 scale, (0 = ‘Very cold’; 10 = ‘Very warm’), and scores  
2 were multiplied by 10 for ease of comparison across studies.

3         **Outgroup Homogeneity.** Outgroup homogeneity is often considered a corollary  
4 phenomenon to dehumanization in that outgroup members are often considered to be part  
5 of a homogeneous faceless mass rather than individualized humans (Ostrom & Sedikides,  
6 1992; Smith, 2011). We assessed outgroup homogeneity here by asking participants to  
7 “Indicate how similar the Roma are to each other in each of the following dimensions”:  
8 ‘intellect’, ‘values’, ‘honesty’, ‘morality’, ‘social opinions’, ‘ambition’, and ‘hope’.  
9 Responses were provided on a 1-6 scale (1= ‘very different from one another’; 6 = ‘very  
10 similar to one another’;  $\alpha = .91$ ).

11         **Responses to Injustice.** We assessed emotional responses to an ingroup act of  
12 outgroup discrimination by presenting participants with a real newspaper report. The  
13 report described an incident that was relatively uncovered in Hungarian media, in which  
14 Hungarian football hooligans went into a Roma village, approached the elementary  
15 school, and began shouting vulgarities at the Roma children while threatening them with  
16 bottles and urinating around the campus; the perpetrators went unpunished. As in  
17 previous studies, we assessed emotional responses by asking: “How angry does this make  
18 you feel?”, “How guilty does this make you feel?”, “How ashamed does this make you  
19 feel?”, and “How compassionate do you feel towards the children?”. Participants  
20 responded on a 1-6 scale (1= ‘not at all’; 6= ‘very much so’;  $\alpha = .86$ ).

21         **Funding Allocated to Roma Integration.** We assessed support for public  
22 spending on (a) “Integration of the Roma into society” versus (b) “Urban development  
23 and beautification (maintenance on public squares and roads)”. Participants were asked

1 what proportion of the budget they wanted to spend on each of these two purposes, using  
2 a 0-100 scale (0= ‘None of the budget’; 100= ‘All of the budget’). We used the percent of  
3 funds allocated to Roma integration as our measure of Roma support.<sup>26</sup>

4 **Support for Discrimination.** We assessed support for a variety of discriminatory  
5 policies targeting the Roma population using 14 items that spanned education,  
6 employment, housing, health and social support. Sample items included “Decrease the  
7 number of Roma teachers” and “Decrease access to social housing for the Roma” (see  
8 Appendix for complete scale). Responses were provided on a 1-9 scale (1 = ‘completely  
9 disagree’; 9 = ‘completely agree’;  $\alpha = .90$ ).

## 10 **Results and Discussion**

11 Descriptive statistics and inter-correlations of all variables are presented in Table  
12 11. Consistent with all other studies, we observed significant levels of dehumanization of  
13 the target group (the Roma) on both blatant ( $M = 28.97$ ,  $SD = 32.72$ ) and subtle ( $M =$   
14  $7.97$ ,  $SD = 18.13$ ) indices. As in previous studies, we included blatant and subtle  
15 dehumanization measures (Ascent and infrahumanization) as simultaneous predictors in  
16 separate regressions for each outcome measure (see Table 12).

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18 **Tables 11 and 12 about here**  
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20  
21 Consistent with previous studies, blatant dehumanization of the Roma predicted  
22 negative and discriminatory outgroup attitudes, controlling for subtle dehumanization.

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<sup>26</sup> One participant entered a score of -100 on the item about integration of Roma into society. This response was recoded as a missing value.

1 Specifically, blatant dehumanization predicted less compassionate responses to a real  
2 newspaper story about the harassment of Roma school children, lower funding  
3 allocations to Roma integration programs (versus urban beautification), and greater  
4 support for discriminatory policies disadvantaging the Roma. As in previous studies, the  
5 effects of Ascent dehumanization could not be reduced to prejudice: Ascent remained a  
6 significant predictor of all dependent variables even when anti-Roma prejudice (as  
7 assessed by relative feeling thermometer ratings) was controlled for. Subtle  
8 dehumanization also uniquely predicted outcomes: Roma infrahumanization predicted  
9 less compassionate responses to the story about harassment of Roma children, less  
10 funding allocated to Roma integration, and support for discriminatory policies targeting  
11 the Roma.

12 Finally, as in previous studies, we observed that SDO-D was significantly more  
13 strongly associated with Ascent dehumanization ( $r = .43, p < .001$ ) than  
14 infrahumanization ( $r = .20, p < .001$ ; Steiger's  $z = 6.14, p < .001$ ).

15 Given our theorizing about the strength of the relationship between SDO-D and  
16 blatant dehumanization in particular, we formally tested the association between SDO-D  
17 and blatant versus subtle dehumanization across all studies where these variables were  
18 available. First, we compared Ascent dehumanization with infrahumanization, since these  
19 measures were used in all studies beyond Study 1 ( $n = 1669$ ). We found that the  
20 correlation between SDO-D and Ascent ( $r = .41, p < .001$ ) was significantly greater than  
21 the correlation between SDO-D and infrahumanization ( $r = .15, p < .001$ ; Steiger's  $z =$   
22  $9.08, p < .001$ ). When we analyzed the subset of samples ( $n = 763$ ) that included Ascent,  
23 all subtle measures of dehumanization (infrahumanization, UH, HN), SDO-D and SDO-

1 E, we found that the correlation between Ascent and SDO-D ( $r = .42, p < .001$ ) was  
2 significantly stronger than the correlation between Ascent and SDO-E ( $r = .25, p < .001$ ;  
3 Steiger's  $z = 5.51, p < .001$ ). Furthermore, the correlation between Ascent and SDO-D  
4 was stronger than the correlation between SDO-D and each of the other dehumanization  
5 measures (infracommunitarianization:  $r = .07, p = .06$ , Steiger's  $z = 7.82, p < .001$ ; UH:  $r = .09, p$   
6  $= .02$ , Steiger's  $z = 7.11, p < .001$ ; HN:  $r = .15, p < .001$ , Steiger's  $z = 6.43, p < .001$ ).  
7 SDO-E was significantly correlated with infracommunitarianization ( $r = .15, p < .001$ ) and HN  
8 dehumanization ( $r = .11, p = .003$ ), but not with UH dehumanization ( $r = .01, p = .76$ ).  
9 Overall, these data show that blatant dehumanization, but not subtle dehumanization, is  
10 distinguished by its strong relationship with the particularly aggressive and overt  
11 Dominance (vs. Egalitarianism) sub-dimension of SDO.<sup>27</sup>

## 12 Study 5

13 In a final study, we examined blatant dehumanization in Americans towards an  
14 openly vilified group: the Islamic State in Iraq and Syria (ISIS). At the time of data  
15 collection (winter of 2014), ISIS had experienced a rapid rise in power and prominence in  
16 the Middle East, and had committed a number of well-publicized acts of violence,  
17 including beheadings of Westerners, and Christians and moderate Muslims residing in the  
18 Middle East. In this study, we had two central aims. First, we were interested in  
19 examining the relationship between blatant dehumanization as assessed by our Ascent  
20 measure and other previously published measures of relatively blatant dehumanization. In

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<sup>27</sup> In order to keep the scaling of the Study 3a variables included in this analysis consistent with the scaling of the variables in the remaining studies, we did not residualize them on experimental condition. We note, however, that experimental condition had negligible influence on the relationship between SDO-D/SDO-E and the dehumanization variables.

1 particular, the measures used in Study 5 included relatively blatant measures of  
2 animalistic and mechanistic dehumanization, which allowed us to examine convergent  
3 validity between the Ascent dehumanization measure and relatively blatant variables  
4 indexing each of these two types of dehumanization. Second, and as in previous studies,  
5 we were able to compare the effects of blatant dehumanization vs. subtle dehumanization  
6 on attitudes and behavior toward ISIS, controlling for prejudice. Finally, we were able to  
7 compare the effects of the Ascent measure vs. other relatively blatant measures of blatant  
8 dehumanization.

## 9 **Method**

10 **Participants.** We recruited 301 American participants ( $M_{\text{age}} = 32.13$ ,  $SD = 10.31$ ;  
11 49.2% female; 234 European Americans; 19 African Americans; 20 Hispanic Americans;  
12 17 Asian Americans; four Native Americans; one Arab American; six Other) from  
13 Amazon's Mechanical Turk marketplace. We excluded the Arab American participant  
14 from analyses.

## 15 **Measures**

16 **Blatant Dehumanization - Ascent.** The Ascent measure of blatant  
17 dehumanization was assessed as in previous studies, here taking the difference between  
18 ratings of Americans and members of ISIS.<sup>28</sup> Other groups assessed were Europeans,  
19 Arabs, Gypsies, Swedes, Israelis, and Russians.

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<sup>28</sup> As with Study 1, we used the instructions-free Ascent scale with a separate pilot group of Americans rating ISIS ( $n = 437$ ); mean Ascent dehumanization of ISIS was similar for the instruction and instruction-free ( $M = 38.22$ ,  $SD = 37.3$ ) versions,  $F < 1$ . Moreover, Ascent dehumanization functioned similarly in the instruction-free sample, strongly predicting intergroup attitudes.

1           **Blatant Dehumanization – Animalistic and Mechanistic.** We assessed blatant  
2 forms of animalistic and mechanistic dehumanization by adapting the multi-item measure  
3 described in Bastian et al. (2013). Specifically, participants were asked to “rate how well  
4 the following terms describe [Americans/members of ISIS]”, using eight items, four  
5 associated with animalistic dehumanization (e.g., “refined and cultured”, “rational and  
6 logical”, “lacking self-restraint, like animals” (reverse-coded), and “unsophisticated”  
7 (reverse-coded)), and four associated with mechanistic dehumanization (“mechanical and  
8 cold, like robots” (reverse-coded), “open-minded, able to think clearly about things”,  
9 “superficial, lacking depth” (reverse-coded), and “emotional; responsive and warm” ).  
10 Ratings were made on a 7-point Likert scale (1 = ‘Not at all’; 7 = ‘Extremely so’).  
11 Animalistic and mechanistic dehumanization were computed by taking the difference  
12 score between humanity attributed to Americans vs. members of ISIS. As with other  
13 measures, higher scores indicate greater relative dehumanization of ISIS.

14           To conduct item-level analyses with a broader range of constructs not included in  
15 the Bastian et al. (2013) measure, we further assessed a range of other perceptions by  
16 adapting qualities comprising animalistic and mechanistic dehumanization from Haslam  
17 (2006, Figure 1). Specifically, using the same instructions as above, we asked participants  
18 to rate the extent to which Americans and members of ISIS were: “savage, aggressive”,  
19 “barbaric, cold-hearted”, “mature, responsible”, “coarse, boorish”, “scholarly, cerebral”,  
20 “backward, primitive”, “lacking morals”, “like objects, lacking in passion”, and “passive,  
21 submissive”. The final two items reflect aspects of mechanistic dehumanization, whereas  
22 the former reflect aspects of animalistic dehumanization. Although we report results  
23 using just the eight items from Bastian et al. (2013) for our indices of blatant mechanistic



1 and animalistic dehumanization, we also examined patterns obtained when these  
2 additional items were included in defining each of these two constructs, as well as item-  
3 level correlations between all 17 items and Ascent.

4       **Blatant Dehumanization – Ipsative.** Blatant dehumanization was also measured  
5 using the ipsative task developed by Viki et al. (2006). To adapt their pencil and paper  
6 method to an online survey, participants were shown a row of 20 words, half associated  
7 with animals (e.g., wild, creature, pedigree) and half associated with humans (e.g.,  
8 person, citizen, man), and 10 outgroup names (five male and five female; e.g., Abdullah,  
9 Fatima). As in the Viki et al. (2006) task, participants were given the following  
10 instructions: “In this word association task, please drag the word from the 'Items' list that  
11 best matches one of the names listed on the right. You may only use 1 item per name, and  
12 no item may be used more than once.” Participants were also shown the same task, with  
13 ingroup names (e.g., Colin, Erika). Presentation order of ingroup and outgroup tasks was  
14 counter-balanced. Blatant dehumanization was assessed as the difference score between  
15 the number of animal words assigned to outgroup names vs. ingroup names (i.e., higher  
16 scores indicate greater dehumanization).

17       **Infrahumanization.** Infrahumanization was assessed as in Study 2b.

18       **Prejudice.** Prejudice was assessed as in Study 2a (i.e., using feeling  
19 thermometers), with Americans and members of ISIS as the target groups of interest.

20       **Arab Immigration Support.** Support for Arab immigration was assessed as in  
21 previous studies, with the exception that the groups were changed to: Arabs, Chinese,  
22 Mexicans, Europeans, Indians and Vietnamese.

1           **Drone Strike Support.** Support for the use of drone strikes was assessed as in  
2 previous studies (with slight adaptations to the ISIS context), by asking participants to  
3 rate their agreement with four items (see Appendix; sample item: “Keeping American  
4 soldiers’ lives out of harms way by using drones is more important than ensuring a total  
5 lack of civilian casualties in countries that harbor ISIS members”;  $\alpha = .82$ ).

6           **Militaristic Counter-terrorism.** Extreme outgroup hostility was assessed  
7 similarly to Study 3a, but with the addition of a few items and the slight adaptation of  
8 others (see Appendix; sample items: “The only way to deal with ISIS is by bringing in  
9 the heavy artillery”, “We should strike back with brutal force against members of ISIS  
10 who seeks to intimidate us”;  $\alpha = .93$ ).

11           **Signing Anti-ISIS Petitions.** To assess a set of behaviors against ISIS, we  
12 provided participants with five petitions purportedly being distributed online. Participants  
13 were told that the petition sponsors had agreed to use mTurk IDs as a proxy for a name  
14 because mTurk IDs are uniquely assigned to individuals. Participants could indicate, for  
15 each petition, whether they would like their mTurk ID added to it (coded as 1), whether  
16 they would like their mTurk ID added to a petition *opposing* that proposition (coded as -  
17 1), or if they would not like their mTurk ID added to either petition (coded as 0). The  
18 petitions were to: “Increase the military budget allotted to combating the ISIS threat”,  
19 “End all immigrant visas granted to citizens of countries harboring ISIS”, “Forcibly  
20 deport all Islamic clerics in the U.S. who preach in favor of ISIS”, “Life imprisonment  
21 for any American Muslim who goes abroad to fight with ISIS and attempts to return”,  
22 “End any form of torture against anti-American militants abroad, including ISIS  
23 members” (reverse-scored);  $\alpha = .70$ .

1           **Encouragement of US soldiers fighting ISIS.** We provided participants with the  
2 opportunity to engage in effortful helping behavior on behalf of the ingroup against ISIS.  
3 Specifically, we told participants: “We would like to give you the opportunity, should  
4 you wish, to write a few lines in support of the American military's effort against ISIS.  
5 Would you like to write a short note in support of the troops fighting against ISIS?”  
6 Participants received a score of ‘1’ if they indicated ‘yes’ and ‘0’ if they declined to write  
7 a message. Participants indicating ‘yes’ were provided with a text box to write their note.

8           **Anti-Islamic Extremism Fund Disbursement.** For our final behavioral measure,  
9 we asked participants to distribute funds between two different programs aimed at  
10 decreasing extremism among Islamic communities in the U.S.: one based purely on  
11 punishment and control, and another appealing to the human capacity for education.  
12 Specifically, participants were told the following:

13           In an effort to give back to some of the communities that are targets of our studies, we  
14 have received a small grant that allows us to distribute some money to anti-terrorism  
15 efforts. We're giving each of our participants the opportunity to decide where this money  
16 should be distributed. Please indicate below what percent of the money you would like  
17 distributed to each of the projects in the U.S. -- we will then base our contributions on  
18 participants' recommendations.  
19  
20 Participants were then asked to indicate what percent of the funds they would like to  
21 contribute to each the following two choices: “Build libraries and schools in Muslim  
22 majority communities throughout the U.S.” and “Increase surveillance and policing  
23 capabilities in Muslim majority communities throughout the U.S.” Our prediction was  
24 that perceiving a group as animals would preclude supporting libraries and schools that  
25 appeal to human-specific cognition, controlling for any like or dislike of that group.  
26 Rather, we reasoned that blatant dehumanization would result instead in support for  
27 control and discipline (tactics commonly employed during training of dogs, for example)

1 to regulate behavior. This was indexed using participants' percentage contributed to  
2 surveillance/policing (versus libraries/schools).

### 3 **Results and Discussion**

4 As with previous studies, we observed significant levels of dehumanization across  
5 all items: for each measure, American participants attributed significantly (and  
6 substantially) more humanity to Americans than to members of ISIS (see Table 13).

7 The first goal of Study 5 was to determine how the Ascent dehumanization  
8 measure corresponds to other measures of blatant dehumanization. As predicted, Ascent  
9 dehumanization was significantly correlated with each of the other relatively blatant  
10 measures (ipsative dehumanization:  $r = .25, p < .001$ ; mechanistic dehumanization:  $r =$   
11  $.39, p < .001$ ; animalistic dehumanization:  $r = .45, p < .001$ ; see Table 13). The predicted  
12 difference between Ascent's correlation with animalistic vs. mechanistic dehumanization  
13 was only trending (Steiger's  $z = 1.55, p = .12$ ); however, when we used the expanded set  
14 of words also including animalistic and mechanistic dehumanization items derived from  
15 Haslam (2006), we observed support for our prediction that Ascent is significantly more  
16 associated with animalistic dehumanization ( $r = .49, p < .001$ ) than mechanistic  
17 dehumanization ( $r = .39, p < .001$ ; Steiger's  $z = 2.65, p = .008$ ).

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18  
19 **Table 13 about here**  
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21  
22 To learn more about what exactly participants' use of the Ascent dehumanization  
23 measure reflected, we also investigated the individual pattern of correlations between the

1 Ascent measure of blatant dehumanization and each of specific items comprising our  
2 blatant mechanistic and animalistic dehumanization measures. As can be seen in Table  
3 14, Ascent dehumanization was associated with a broad range of items: Ascent had,  
4 numerically, the highest correlations with perceived maturity and responsibility ( $r = -.43$ ,  
5  $p < .001$ ), rationality and logic ( $r = -.41$ ,  $p < .001$ ), and backwardness and primitiveness  
6 ( $r = .39$ ,  $p < .001$ )— all aspects of animalistic dehumanization—and the lowest  
7 correlations with passivity and submissiveness ( $r = -.06$ ), emotionality and warmth ( $r =$   
8  $.22$ ), and superficiality and lack of depth ( $r = .27$ )— all aspects of mechanistic  
9 dehumanization. In sum, the Ascent measure of blatant dehumanization is associated with  
10 a wide range of components of blatant dehumanization, and particularly to aspects of  
11 animalistic dehumanization reflecting perceptions such as irrationality, primitiveness, and  
12 irresponsibility.

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13  
14 **Table 14 about here**  
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16  
17 As in previous studies, we were centrally interested in comparing the predictive  
18 utility of blatant vs. subtle dehumanization across a number of attitudes and behaviors,  
19 controlling for prejudice. In this study, we were further interested in comparing the  
20 predictive validity of the various measures of blatant dehumanization to each other. As  
21 such, we conducted two sets of regressions: first, we compared a composite of the blatant  
22 dehumanization scales (Ascent, mechanistic dehumanization, animalistic  
23 dehumanization, and ipsative dehumanization; all scales standardized,  $\alpha = .68$ ) with

1    infrahumanization. Second, we considered the predictive validity of infrahumanization  
2    and each of the individual blatant dehumanization measures when they were all included  
3    as independent predictors of the various outcomes in a series of multiple regressions.

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**Tables 15 and 16 about here**

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As expected, the composite measure of blatant dehumanization significantly predicted all intergroup outcomes including all three attitudes and all three behaviors, controlling for infrahumanization (See Table 15), and prejudice. When all measures of blatant dehumanization (and infrahumanization) were examined separately, and included together in regression analyses predicting each of the outcome measures, only Ascent dehumanization uniquely and significantly predicted all outcome measures, even controlling for prejudice (see Table 16). Ipsative dehumanization also uniquely predicted all outcome measures, with the exception of sending messages of support to U.S. soldiers fighting ISIS. Animalistic dehumanization uniquely predicted two of the attitudinal measures (support for drone strikes and militaristic counter-terrorism), whereas neither mechanistic dehumanization nor infrahumanization significantly predicted additional variance for any of the outcome measures.

The behavioral measure assessing fund disbursement provides an interesting window into the effects of blatant dehumanization by tapping into perceptions about outgroup cognition. When faced with the forced choice of combating violent Muslim extremism through policing or education, we reasoned that dehumanization would predict

1 greater support for policies that were punitive (i.e. diverting funding to police and  
2 surveillance) versus transformative (i.e. diverting funding to schools and libraries)  
3 because higher education is lost on non-humans (see Jahoda, 2013). Perceiving another  
4 group as irrational, primitive, and savage-like could reduce support for transformative  
5 actions designed to appeal to higher cognition regardless of positive or negative affect  
6 towards that group (see similar ideas regarding patronizing forms of dehumanization of  
7 women, children, and the disabled; e.g., Bogdan & Taylor, 1989; Haslam, 2006; Heflick  
8 & Goldenberg, 2009; Jahoda, 2013; Ortnier, 1974). Consistent with this reasoning, we  
9 found that Ascent dehumanization, which related most strongly in the item analysis to  
10 perceptions of others as illogical, irrational and primitive, strongly predicted punitive  
11 over transformative policy.

12 In sum, Study 5 reinforced the importance of blatant dehumanization in the  
13 context of real intergroup conflict. Consistent with previous studies, blatant  
14 dehumanization correlated with outcomes relevant to intergroup conflict, including three  
15 behaviors, and predicted all of these outcomes accounting both for subtle dehumanization  
16 and prejudice. Study 5 also further characterized the Ascent measure relative to other  
17 measures of blatant dehumanization: Ascent dehumanization was more strongly  
18 associated with overtly animalistic versus mechanistic characteristics, but was  
19 significantly associated with both. Finally, Ascent dehumanization predicted all outcomes  
20 even beyond other measures of relatively blatant dehumanization. Together, these results  
21 help solidify the significance of blatant dehumanization to real intergroup conflicts, and  
22 support the use of Ascent, in particular, as a valid construct of blatant dehumanization.

23

## **General Discussion**

1           Across seven studies, we sought to establish the theoretical importance of blatant  
2 dehumanization beyond the established subtle indices of dehumanization that have  
3 dominated research on the topic. Despite the documented importance of subtle  
4 dehumanization to intergroup processes, there are a variety of contemporary contexts in  
5 which dehumanization is overt and unbridled. We reason that in such contexts  
6 understanding and measuring explicit blatant dehumanization provides utility over and  
7 above subtler and more indirect forms of dehumanization that may even occur outside  
8 conscious awareness (Leyens et al., 2000; 2007; see also Haslam, 2013). In testing this  
9 claim, we provided a rare and much-needed comprehensive comparison of the effects of  
10 blatant versus subtle dehumanization across a range of intergroup attitudes and behaviors  
11 (see Castano & Giner-Sorolla, 2006, and Leidner et al., 2010 for exceptions). Through  
12 this work, we also aimed to provide a useful, validated and generalizable empirical tool  
13 for the measurement of blatant dehumanization, which has thus far been lacking. Using  
14 the novel Ascent measure of blatant dehumanization, we found that people in three  
15 different countries openly reported that some groups are less ‘evolved and civilized’ than  
16 others, that these ratings showed high test-retest reliability, and, crucially, that Ascent  
17 dehumanization was the strongest and most consistent predictor of a variety of outcome  
18 measures across an array of contexts and target groups.

19           Importantly, blatant dehumanization (as assessed by Ascent) was not merely a  
20 proxy for outgroup negativity. Across the studies, we examined the predictive validity of  
21 Ascent after controlling for outgroup negativity, operationalized as prejudice (Studies 2a,  
22 2b, 3b, and 4, and 5; Haddock et al., 1993; Brigham, 1993), and outgroup threat (Stephan  
23 & Stephan, 2000; Study 3a). Although blatant dehumanization was, unsurprisingly,



1 significantly associated with prejudice and perceived threat, it remained a significant  
2 outcome predictor in each study even after outgroup negativity was controlled for. When  
3 examining American attitudes and behavior towards ISIS, for example, the Ascent  
4 measure of blatant dehumanization predicted all outcome measures (including three  
5 behavioral measures) after accounting for prejudice.

6 Finally, it is worth noting that although blatant dehumanization was related to  
7 both SDO (particularly SDO-D) and RWA, these measures remained independent  
8 predictors of outcomes – blatant dehumanization consistently predicted outcome  
9 measures across studies after accounting for both SDO and RWA (see footnote 13).

#### 10 **Subtle versus blatant dehumanization**

11 The Ascent measure of blatant dehumanization was remarkably effective at  
12 predicting a variety of outcome measures, from subtle aversion to outright vengeance.  
13 The measure is also intuitive, efficient and reliable. Together, these characteristics  
14 establish the Ascent measure as a practically useful tool in the study of blatant  
15 dehumanization specifically, and intergroup processes more generally. At the same time,  
16 our results highlight a number of *theoretically* important aspects of blatant  
17 dehumanization.

18 First, blatant dehumanization and subtle measures of dehumanization responded  
19 differently to instances of real intergroup violence. Ascent dehumanization increased  
20 immediately after the Boston Marathon bombings, compared to both two months before  
21 and six months after the attacks. This spike in dehumanization following incidents of  
22 intergroup violence that induce a sense of threat and moral disengagement is in line with  
23 historical precedent (Steuter & Willis, 2010) and consistent with prior dehumanization

1 research (McAlister, Bandura, & Owen, 2006). Blatant dehumanization also predicted  
2 important outcomes in the wake of intergroup violence: in Studies 3a and 3b, which  
3 followed terrorist attacks, Ascent predicted outcomes such as support for violent counter-  
4 terrorism, drone strikes, and vengeance, even after controlling for outgroup negativity.  
5 This was also the case when examining American attitudes towards ISIS—engaged in  
6 attacks against Americans at the time of data collection—whether blatant dehumanization  
7 was assessed using Ascent or the composite blatant dehumanization measure. On the  
8 other hand, subtle indices of dehumanization remained unchanged in the aftermath of the  
9 terrorists attacks, and showed no increased predictive power in these contexts. Thus,  
10 whereas an incident of intergroup threat may result in increased blatant dehumanization,  
11 it may not translate as readily to subtle dehumanization. While future work will be  
12 necessary to unpack the psychological mechanisms driving changes in blatant vs. subtle  
13 dehumanization, the data reported here illustrate an important divergence between these  
14 two conceptualizations.

15         Second, blatant and subtle dehumanization have clearly distinct personality  
16 correlates. Specifically, individuals particularly likely to endorse group-based hierarchy  
17 were also more likely to perceive their group as more evolved than outgroups. This was  
18 specifically the case for SDO-D, reflecting the endorsement of *active* and overt  
19 domination of ‘inferior’ groups by ‘superior’ groups. Indeed, blatant dehumanization was  
20 significantly more associated with SDO-D than with the ‘Egalitarianism’ sub-dimension  
21 of SDO (i.e., SDO-E), which is associated with more passive and subtle support of  
22 hierarchy-enhancing intergroup attitudes (Ho et al., 2012; 2015). Moreover, blatant

1 dehumanization was significantly more associated with SDO-D than were any of the  
2 subtle measures of dehumanization.

3         The Ascent measure was also associated with RWA (as were, in some cases, the  
4 subtle dehumanization measures, especially infracommunitarianism), suggesting that another  
5 source of blatant outgroup dehumanization is the sense that some outgroups contravene  
6 ingroup norms and values. Consistent with this, observing outgroup cultural practices that  
7 are perceived to be disgusting (e.g., eating the anus of a warthog) can, under certain  
8 conditions, increase blatant dehumanization on the Ascent measure (Kteily & Hodson, in  
9 prep). Future work should explore the mechanisms influencing the relationship between  
10 RWA and blatant versus subtle dehumanization more systematically.

11         Finally, although blatant dehumanization was generally the more effective  
12 predictor of most outcome variables across all target groups, both subtle and blatant  
13 measures of dehumanization predicted unique variance in intergroup outcomes. One  
14 prediction of the current work was that blatant dehumanization would best predict overt  
15 and aggressive outcome measures (e.g. support of vengeance in response to terror attacks,  
16 support for Roma discrimination), consistent with research suggesting that explicit  
17 attitudes are particularly likely to shape outcomes for which people have the motivation  
18 and opportunity to deliberate over courses of action (Dovidio et al., 2002; Wilson et al.,  
19 2000). This proved to be the case, as blatant dehumanization was generally the strongest  
20 and most consistent predictor of extreme outcome measures like support for torture of  
21 ISIS members, vengeance against Arabs and support for anti-Roma discrimination  
22 programs; nevertheless, subtle dehumanization measures sometimes explained additional  
23 variance.

1           On the other hand, we thought that subtler forms of dehumanization might be  
2 particularly well positioned to predict relatively subtle outcome measures (e.g., Dovidio  
3 et al., 2002). For example, given that aversive racism can take hold even unconsciously  
4 (Dovidio & Gaertner, 2000), we expected that subtle racism (rejecting an ambiguously  
5 qualified outgroup judge for promotion) might be most strongly predicted by subtle  
6 measures of dehumanization (e.g., infrahumanization and/or UH/HN dehumanization)  
7 that involve less direct denial of humanness than blatant dehumanization. However, we  
8 did not find that subtle dehumanization outperformed blatant dehumanization in  
9 predicting aversive racism. One possibility is that we did not use outcome measures that  
10 were subtle enough. Alternative subtle measures, such as those reflecting paternalism  
11 towards native groups or women, should be tested in the future. More generally, future  
12 research should continue to clarify the conditions under which blatant vs. subtle  
13 dehumanization may predominate.

14           Another line of future research could explore the validity of blatant  
15 dehumanization in interpersonal contexts. It seems possible, for example, that blatant  
16 dehumanization may inform sentences levied at criminal perpetrators (cf. Bastian et al.,  
17 2013), predict tolerance for domestic abuse, or license physical punishment of minors in  
18 foster care. Individuals may also blatantly dehumanize those who socially ostracize them  
19 (Bastian & Haslam, 2010).

## 20 **Potential Limitations and Future Directions**

21           Notwithstanding the contributions of the present research, some limitations and  
22 questions require further examination. One question about the Ascent measure (as well as  
23 blatant dehumanization more generally) that will require further investigation is its

1 applicability to contexts requiring socially desirable responding. Particularly given our  
2 attempt to make the measure as blatant as possible, it is possible that Ascent’s usefulness  
3 may be limited in some contexts or populations. Although American, British, and  
4 Hungarian community samples suggest that a substantial portion of these populations  
5 harbor and express blatant dehumanization, it is possible that this would not be the case  
6 among other samples (e.g., liberal college students).

7         Another potential limitation of the Ascent dehumanization measure is that it may  
8 not apply to all target outgroups. We observed significant Ascent dehumanization of  
9 multiple groups in Study 1 that are not engaged in open hostilities with Americans (e.g.,  
10 South Koreans, and Mexican immigrants), and Ascent provided some marginal utility for  
11 predicting outgroup attitudes and behavior towards African Americans, Hispanic  
12 Americans, and Chinese people in Studies 2a and 2b. This suggests that Ascent  
13 dehumanization may be relevant and useful for certain low status groups even outside the  
14 context of intense conflict.

15         Nevertheless, the prevalence of blatant dehumanization in a population will likely  
16 depend on characteristics of the outgroup under consideration. One such factor may be  
17 the level of intergroup conflict between the ingroup and the outgroup, or the perceived  
18 threat posed by the outgroup. For example, although Americans reported significant  
19 blatant dehumanization of African Americans, Hispanic Americans, and Chinese people,  
20 a smaller proportion of Americans expressed such attitudes towards these groups relative  
21 to Arabs, with whom the U.S. has an extensive recent history of conflict. A still greater  
22 proportion of Americans blatantly dehumanized members of ISIS— a group whose direct  
23 and brutal targeting of American citizens is, at present, acutely salient.

1           Another dimension likely to influence blatant dehumanization is the status of the  
2 outgroup in question. Groups occupying positions of particularly low status in society  
3 (e.g., the Roma, homeless people) might be most subject to blatant dehumanization, all  
4 else being equal (see also Harris & Fiske, 2006). The relatively large proportion of  
5 Hungarians who blatantly dehumanized the Roma is consistent with this, although future  
6 work should more systematically measure or experimentally manipulate the status of the  
7 outgroups in question.

8           One potential extension of this idea is the notion that blatant dehumanization is  
9 not only exacerbated by low status, but is in fact *dependent* upon it. Americans’  
10 reluctance to blatantly dehumanize higher status outgroups such as Europeans and  
11 Australians seems consistent with this position. However, we suspect that there will be  
12 several contexts in which people will blatantly dehumanize even relatively high status  
13 outgroups. For example, Communists’ perceptions about Capitalist exploitation of others,  
14 and religious fundamentalists’ perceptions of Western moral degradation and excess may  
15 well involve blatant dehumanization of these high status groups. As well, subordinate  
16 groups subjected to intense violence in asymmetric conflict might also engage in blatant  
17 dehumanization toward more dominant, ‘advanced’, and Western outgroups. In fact,  
18 preliminary evidence suggests that Ascent dehumanization can cut in both directions  
19 along a power gradient: in a study conducted in the Middle East during the invasion of  
20 Gaza in the Summer of 2014, low status Palestinians rated high status Israelis to be  
21 substantially less ‘evolved’ than Palestinians (a 35 point ingroup versus outgroup rating  
22 differential on the 100-point Ascent scale). Indeed, Palestinian dehumanization of Israelis

1 was about equivalent to Israeli dehumanization of Palestinians (Bruneau & Kteily, in  
2 preparation).

3           Compared to blatant dehumanization, subtle dehumanization may be relatively  
4 less sensitive to factors such as group status (Gaunt, 2009; Leyens et al., 2001) and  
5 intergroup conflict/perceived threat, and may therefore apply more widely. Indeed, one of  
6 the major contributions of subtle dehumanization research (e.g., infrahumanization and  
7 UH/HN dehumanization) has been the illustration of dehumanization as an ‘everyday’  
8 phenomenon, that may operate outside of conscious awareness (Leyens et al., 2007) and  
9 manifest indirectly (Haslam & Loughnan, 2014). Consistent with this, preliminary data  
10 we collected suggests that blatant dehumanization is a better predictor (relative to subtle  
11 dehumanization) of compassion towards Arab targets, while subtle dehumanization is a  
12 better predictor of compassion for Swiss targets. It therefore seems most appropriate to  
13 think of blatant dehumanization not as a measure to supplant existing subtle  
14 dehumanization constructs, but as a way to complement or supplement them.

15           Another matter worth discussing is our assessment of blatant dehumanization as a  
16 relative phenomenon. Although this has certain advantages, and is consistent with  
17 previous conceptualizations and operationalizations of dehumanization of outgroups as  
18 relative to the humanity granted the ingroup (e.g., Paladino et al., 2002; Viki et al., 2011;  
19 Leyens et al., 2000; see also Haslam, 2013, pp.38-41 & 44 for a detailed discussion of  
20 assessing dehumanization as a relative vs. absolute phenomenon), we note that there will  
21 be contexts in which absolute ratings of outgroup humanity are also relevant. For  
22 example, it is noteworthy that although Americans blatantly dehumanized Arabs relative  
23 to Americans (rating Arabs, on average, a little over 10 points lower on the Ascent scale

1 than Americans), the average rating of Arabs was still reasonably high on the Ascent  
2 scale (typically around 80 points on the 100-point scale). On the other hand, the Roma  
3 were strongly dehumanized both relatively and absolutely by Hungarians, with average  
4 ratings of (absolute) Roma humanity on the Ascent scale of about 50. Although very  
5 similar results were observed across our studies when absolute Ascent dehumanization  
6 was used rather than relative Ascent dehumanization, future work may benefit from  
7 further considering the implications of treating blatant dehumanization in relative vs.  
8 absolute terms.

9         Finally, although we began to explore the relationship between the Ascent  
10 measure of blatant dehumanization and other relatively blatant measures, more work  
11 undoubtedly needs to be done to refine our understanding of the convergence and  
12 divergence of Ascent with mechanistic and animalistic dehumanization. For example, it  
13 will be important to consider whether there may be instances where the relatively blatant  
14 indices of mechanistic and animalistic dehumanization provide more utility than the  
15 Ascent measure alone. Since the Ascent measure does not allow a simple dissociation  
16 between the animalistic and mechanistic components of blatant dehumanization, contexts  
17 in which such distinctions are important would likely benefit from the inclusion of the  
18 multi-item measures proposed by Bastian et al. (2013). Furthermore, research might  
19 benefit from a pictorial analogue of the Ascent measure specifically targeting the  
20 mechanistic aspects of blatant dehumanization.

21         Despite the fact that more work is required to fully understand blatant  
22 dehumanization and delineate the most appropriate measures with which to assess it, the  
23 central point we hope to convey in this research is the importance of conducting this



1 work. While subtle dehumanization may be more common than blatant dehumanization,  
2 numerous contemporary intergroup contexts render blatant dehumanization highly  
3 relevant: the Romani population in Europe, sectarian conflicts in Syria and Iraq, the  
4 conflict in Israel/Palestine, continuing struggles between Indians and Pakistanis, conflict  
5 between religious groups like Hindus and Muslims in India. These contexts bare striking  
6 similarities to dark periods in human history where explicit dehumanization enabled  
7 violence and helped usher in incredible human suffering (e.g., equating Tutsis with  
8 cockroaches prior to the Rwandan genocide). Having a validated way to measure the  
9 perception of blatant dehumanization brings us closer to understanding how this  
10 psychological phenomenon can cause terrible acts of mass violence, and potentially how  
11 to mitigate its effects.

## 12 **Conclusion**

13 The current research examined whether individuals engage in blatant  
14 dehumanization towards certain groups, and if so, whether blatant dehumanization  
15 predicts consequential intergroup outcomes. Across numerous targets and social contexts,  
16 we found that individuals were willing to overtly describe many other groups as less  
17 ‘evolved’ than their own. The degree of blatant dehumanization expressed in turn  
18 uniquely predicting a range of aggressive attitudes and behavior such as support for  
19 torture and openly discriminatory social policy, and spiked following intergroup violence  
20 when measures of subtle dehumanization did not. These findings highlight the need to  
21 further our understanding of blatant and explicit dehumanization, particularly in light of  
22 the number of persistent violent intergroup conflicts around the world.

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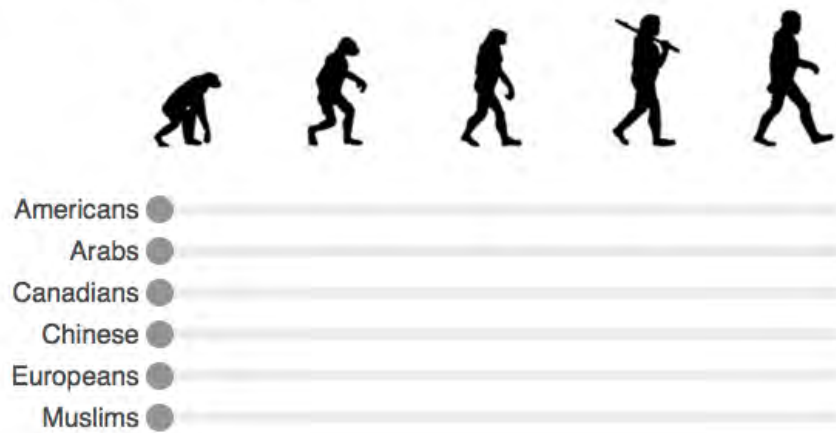
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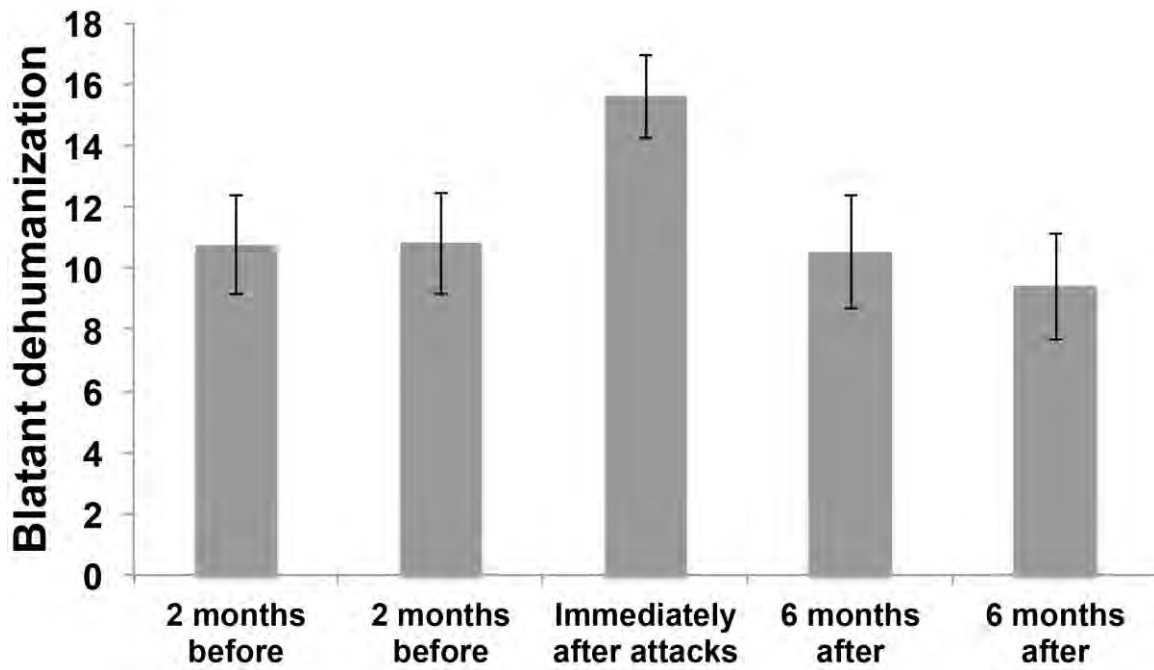


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People can vary in how human-like they seem. Some people seem highly evolved whereas others seem no different than lower animals. Using the image below, indicate using the sliders how evolved you consider the average member of each group to be:



*Figure 1. The Ascent measure of blatant dehumanization. Responses were made for each target group using the sliders next to the groups. Target group order was randomized across participants.*



*Figure 2.* Ascent dehumanization of Arabs 2 months before, immediately after, and 6 months after the Boston Marathon bombing attacks. Error bars represent SEM.

Table 1. Mean and relative blatant dehumanization in Study 1 assessed using the Ascent measure.

Target	Mean (SD)	Quartiles (25, 50, 75)	Difference score (Americans – [target group])
Americans	91.5 (15.2)	87.3, 100, 100	--
Europeans	91.9 (15.7)	90, 100, 100	-0.4, ns
Swiss people	91.2 (17.9)	90, 100, 100	0.3, ns
Japanese people	91.1 (16.9)	89.3, 100, 100	0.4, ns
French people	91.0 (16.9)	90, 100, 100	0.5, ns
Australians	90.1 (18.2)	87, 100, 100	1.6, ns
Austrians	89.9 (19.2)	86, 100, 100	1.6, ns
Icelanders	89.8 (18.7)	89, 100, 100	1.7, ns
Chinese people	88.4 (19.7)	83.3, 100, 100	3.1**
South Koreans	86.9 (23.4)	81, 100, 100	4.7**
Mexican Immigrants	83.7 (24.7)	75.3, 100, 100	7.9***
Arabs	80.9 (27.4)	70, 97.5, 100	10.6***
Muslims	77.6 (29.7)	60, 91, 100	14.0***

Note. \*\*\*  $p < .001$  \*\*  $p < .01$

Table 2. Zero-order correlations between Ascent Dehumanization and SDO, RWA, Personality, and Empathy in Study 1.

	SDO-D	SDO-E	RWA	Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness	EC	PT	PD	FY
Ascent Dehumanization	.42***	.12	.22**	-.14	.26**	-.08	-.14	.16*	.02	.01	-.09	-.07

*Note.* SDO-D= Social Dominance Orientation-Dominance; SDO-E = Social Dominance Orientation-Egalitarianism; RWA = Right-wing authoritarianism; EC = Empathic Concern; PT = Perspective Taking; PD= Personal Distress; FY= Fantasy; \*\*\*  $p < .001$  \*\*  $p < .01$

Table 3. Descriptive statistics and variable intercorrelations for Study 2a.

	1	2	3	4	5	6	7	8	9	10
1. Ascent Dehumanization	-									
2. Infracumanization	.20*	-								
3. Unique Humanness	-.08	-.15	-							
4. Human Nature	.30**	.04	.62***	-						
5. Implicit Dehumanization	.11	.20*	-.01	.04	-					
6. Prejudice	.57***	.42***	.02	.40***	.21*	-				
7. Arab Immigration Support	-.49***	-.32**	.04	-.21*	-.06	-.42***	-			
8. Responses to Injustice	-.32***	-.14	.09	-.16	-.02	-.25***	.39***	-		
9. Responses to Media Portrayal	-.29**	-.24**	.07	-.28**	-.14	-.43***	.37***	.48***	-	
10. Outgroup vs. Ingroup Donation	-.29**	-.21*	.10	-.08	-.20*	-.47***	.27**	.24**	.39***	-
<i>M</i>	10.55†	8.88†	3.87†	3.86†	.36†	29.58	13.93	62.75	58.66	.13
<i>SD</i>	21.17	15.59	12.98	15.15	.38	31.33	8.66	25.90	24.35	.08
Quartiles	0, 0, 20	-3, 8.3, 19.8	-5, 3.9, 11.3	-2.8, 3.3, 11.4	.11, .40, .65	--	--	--	--	--

\*\*\*  $p < .001$  \*\*  $p < .01$  \*  $p < .05$ ; † One sample t-test indicates value significantly different from 0,  $p < .05$  (tested only on variables 1-5). The descriptive statistics for infracumanization reflect differential attribution of secondary emotions unresidualized on differential attribution of primary emotions.

Table 4. Simultaneous regressions predicting outgroup attitudes and behavior as a function of dehumanization in Study 2a.

	Arab Immigration Support R <sup>2</sup> = .29		Responses to Injustice R <sup>2</sup> = .13		Responses to Media Portrayal R <sup>2</sup> = .21		Outgroup vs. Ingroup Donation R <sup>2</sup> = .13	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	B	<i>p</i>	$\beta$	<i>p</i>
Ascent Dehumanization	-.40†	<.001	-.23†	.02	-.10	.26	-.22	.02
Infrahumanization	-.21†	.01	-.07	.43	-.13	.14	-.12	.20
UH	.09	.39	.17	.15	.33†	.003	.11	.33
HN	-.12	.27	-.20	.11	-.43†	<.001	-.07	.57
IAT Dehumanization	.03	.68	.02	.79	-.08	.36	-.15	.09

Note. † Indicates an estimate that is significant at  $p < .05$  controlling for prejudice. UH = Unique Humanness; HN= Human Nature

Table 5. Descriptive statistics and variable intercorrelations in Study 2b.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Ascent Dehumanization	-											
2. Infracumanization	.17*	-										
3. Unique Humanness	-.01	.08	-									
4. Human Nature	.12	.14	.73***	-								
5. Prejudice	.44***	.06	.03	.04	-							
6. Arab Immigration Support	-.51***	-.15	.01	-.16*	-.60***	-						
7. Responses to Injustice	-.16*	-.10	.01	.05	-.36***	.26**	-					
8. Compensation for Injustice	-.37**	-.25*	-.01	-.10	-.25*	.29**	.38***	-				
9. Response to Media Portrayals	-.17*	-.30***	-.09	-.10	-.39***	.29***	.42***	.44***	-			
10. Militaristic counter-terrorism	.29***	.15	-.10	-.09	.49***	-.40***	-.36***	-.32**	-.37***	-		
11. Aversive Racism	.34**	-.12	.09	.06	.39***	-.33***	-.27**	-.19	-.23**	.17*	-	
12. Outgroup Donation	-.24**	-.16*	.09	.06	-.24**	.18*	.25**	.27*	.29***	-.25**	-.17*	-
<i>M</i>	9.39†	5.01†	6.50†	11.96†	24.80	15.65	77.06	\$3.95 million	62.41	27.99	35.33	.29
<i>SD</i>	21.76	15.19	14.20	14.88	23.83	6.33	23.27	\$3.69 million	24.69	27.71	22.14	.40
Quartiles	0,0, 12.75	-4.5, 3.0, 14.6	-.18, 3.8, 13.4	1.9, 8.7, 19.1	--	--	--	--	--	--	--	--

\*\*\*  $p < .001$  \*\*  $p < .01$  \*  $p < .05$ ; † One sample t-test indicates value significantly different from 0,  $p < .05$  (tested only on variables 1-4). The descriptive statistics for infracumanization reflect differential attribution of secondary emotions unresidualized on differential attribution of primary emotions.



Table 6. Simultaneous regressions predicting outgroup attitudes and behavior as a function of dehumanization in Study 2b.

	Support for Arab Immigration R <sup>2</sup> = .29		Responses to Injustice R <sup>2</sup> = .04		Compensation for Injustice R <sup>2</sup> = .19		Responses to Media Portrayals R <sup>2</sup> = .11		Militaristic Counter-terrorism R <sup>2</sup> = .11		Aversive Racism R <sup>2</sup> = .16		Outgroup Donation R <sup>2</sup> = .09	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Ascent Dehumanization	-.48†	<.001	-.17	.04	-.34†	.002	-.13	.10	.28	<.001	.38†	<.001	-.23±	.005
Infrahumanization	-.06	.42	-.08	.32	-.21†	.04	-.27†	<.001	.13	.11	-.19†	.01	-.14±	.08
UH	.17	.10	-.09	.46	.04	.81	-.08	.49	-.02	.84	.16	.14	.06	.59
HN	-.22	.03	.14	.23	-.10	.52	.01	.92	-.12	.27	-.07	.50	.06	.61

*Note.* † Indicates an estimate that remains significant at  $p < .05$  controlling for prejudice. ± Indicates an estimate that remains (marginally) significant at  $p < .10$  controlling for prejudice. UH = Unique Humanness; HN= Human Nature

Table 7. Descriptive statistics and intercorrelations of variables in Study 3a.

	1	2	3	4	5	6	7	8	9	10
1. Ascent Dehumanization	-									
2. Infracommunitization	.28***	-								
3. Unique Humanness	.24***	.15**	-							
4. Human Nature	.37***	.21***	.74***	-						
5. Perceived Outgroup Threat	.61***	.34***	.25***	.39***	-					
6. Support for Arab Immigration	-.43***	-.22***	-.13*	-.26***	-.51***	-				
7. Drone strike support	.30***	.18**	.06	.22***	.38***	-.34***	-			
8. Militaristic Counterterrorism	.47***	.28***	.09	.24***	.58***	-.43***	.70***	-		
9. Outgroup sympathy	-.35***	-.20***	-.09	-.20***	-.45***	.43***	-.46***	-.47***	-	
10. Vengeance	.53***	.22***	.07	.21***	.49***	-.42***	.26***	.44***	-.26***	-
<i>M</i>	15.58 †	.29†	.15†	.23†	3.08	11.40	4.00	3.26	3.55	1.52
<i>SD</i>	25.43	.90	.62	.74	1.65	6.45	.99	1.38	1.95	1.14
Quartiles	0, 0, 25	-.17, 0, .67	-.18, .13, .50	-.25, .13, .63	--	--	--	--	--	--

\*\*\*  $p < .001$  \*\*  $p < .01$  \*  $p < .05$ ; † One sample t-test indicates value significantly different from 0,  $p < .05$  (tested only on variables 1-4). The descriptive statistics for infracommunitization reflect differential attribution of secondary emotions unresidualized on differential attribution of primary emotions.

Table 8. Simultaneous regressions predicting outgroup attitudes as a function of dehumanization in Study 3a.

	Support for Arab Immigration R <sup>2</sup> = .22		Drone Support R <sup>2</sup> = .15		Militaristic counter-terrorism R <sup>2</sup> = .28		Outgroup Sympathy R <sup>2</sup> = .15		Vengeance R <sup>2</sup> = .32	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Ascent Dehumanization	-.36†	<.001	.23	<.001	.40†	<.001	-.29†	<.001	.51†	<.001
Infracommunication	-.10	.06	.09	.10	.16±	.001	-.09	.08	.07	.15
UH	.11	.14	-.24†	.002	-.17†	.01	.11	.13	-.17†	.01
HN	-.20	.01	.31†	<.001	.22±	.002	-.17	.04	.17	.02

*Note.* † Indicates an estimate that is significant at  $p < .05$  controlling for perceived outgroup threat. ± Indicates an estimate that is (marginally) significant at  $p < .10$ , controlling for perceived outgroup threat. UH = Unique Humanness; HN= Human Nature

Table 9. Descriptive statistics and intercorrelations of variables in Study 3b.

	1	2	3	4	5	6	7	8	9
1. Ascent Dehumanization	-								
2. Infracumanization	.15	-							
3. Unique Humanness	.20*	.08	-						
4. Human Nature	.38***	.11	.73***	-					
5. Prejudice	.57***	.27**	.24*	.42***	-				
6. Drone strike support	.40***	.04	.14	.26**	.40***	-			
7. Militaristic Counter- terrorism	.60***	.02	.18	.31**	.52***	.58***	-		
8. Outgroup Individuation	-.32***	.00	.02	-.07	-.35***	-.20*	-.29**	-	
9. Punitiveness	.44***	.17	.23*	.34***	.52***	.52***	.64***	-.12	-
<i>M</i>	21.00 †	.52†	.40†	.49†	3.91	3.98	3.58	5.04	-0.01
<i>SD</i>	33.68	1.34	.67	1.00	1.65	.96	1.37	1.85	.73
Quartiles	0, 2.5, 40.5	-.17, .08, 1.17	0, .38, .75	0, .29, .90	--	--	--	--	--

\*\*\*  $p < .001$  \*\*  $p < .01$  \*  $p < .05$ ; † One sample t-test indicates value significantly different from 0,  $p < .05$  (tested only on variables 1-4). The descriptive statistics for infracumanization reflect differential attribution of secondary emotions unresidualized on differential attribution of primary emotions.

Table 10. Simultaneous regressions predicting outgroup attitudes as a function of dehumanization in Study 3b.

	Drone Support R <sup>2</sup> = .16		Militaristic counter-terrorism R <sup>2</sup> = .35		Outgroup Individuation R <sup>2</sup> = .12		Punitiveness R <sup>2</sup> = .24	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Ascent Dehumanization	.33†	.001	.55†	<.001	-.34†	.001	.35±	<.001
Infracommunitarianism	-.01	.88	-.05	.51	.02	.82	.09	.27
UH	-.06	.63	-.04	.74	.10	.44	.02	.90
HN	.16	.25	.11	.36	-.05	.75	.19	.15

*Note.* † Indicates an estimate that is significant at  $p < .05$  controlling for outgroup prejudice. ± Indicates an estimate that is (marginally) significant at  $p < .10$  controlling for outgroup prejudice. UH = Unique Humanness; HN= Human Nature

Table 11. Descriptive statistics and intercorrelations of variables in Study 4.

	1	2	3	4	5	6	7
1. Ascent Dehumanization	-						
2. Infracumanization	.25***	-					
3. Prejudice	.53***	.15***	-				
4. Funding allocated to Roma Integration	-.39***	-.22***	-.28***	-			
5. Support for Discrimination	.38***	.20***	.32***	-.63***	-		
6. Perceptions of Outgroup Homogeneity	.19***	.03	.11**	-.19***	.20***	-	
7. Responses to Injustice	-.22***	-.17***	-.16***	.43***	-.56***	-.17***	-
<i>M</i>	28.97 †	7.97†	24.68	29.06	3.08	2.98	4.19
<i>SD</i>	32.72	18.13	29.35	25.30	1.08	1.34	1.51
Quartiles	0, 20, 50	-1.7, 6.7, 18.3	--	--	--	--	--

\*\*\*  $p < .001$  \*\*  $p < .01$  \*  $p < .05$ ; † One sample t-test indicates value significantly different from 0,  $p < .05$  (tested only on variables 1-2). The descriptive statistics for infracumanization reflect differential attribution of secondary emotions unresidualized on differential attribution of primary emotions.

Table 12. Simultaneous regressions predicting outgroup attitudes as a function of dehumanization in Study 4.

	Funding Allocated to Roma Integration R <sup>2</sup> = .16		Support for Discrimination R <sup>2</sup> = .16		Perceptions of Outgroup Homogeneity R <sup>2</sup> = .04		Responses to Injustice R <sup>2</sup> = .06	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Ascent Dehumanization	-.35†	<.001	.35†	<.001	.20†	<.001	-.19†	<.001
Infrahumanization	-.13†	<.001	.12†	<.001	-.02	.60	-.12†	<.001

Note. † Indicates an estimate that is significant at  $p < .05$  controlling for prejudice.

Table 13. Descriptive statistics and intercorrelations of variables in Study 5.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Ascent Dehumanization	-											
2. Animalistic Dehumanization	.45***	-										
3. Mechanistic Dehumanization	.39***	.72***	-									
4. Ipsative Dehumanization	.25***	.14*	.14*	-								
5. Infrahumanization	.19***	.24***	.20**	.10	-							
6. Prejudice	.38***	.46***	.52***	.05	.19**	-						
7. Support for Arab Immigration	-.32***	-.26**	-.21***	-.25***	-.04	-.13*	-					
8. Support for Drone Strikes	.31***	.32***	.24***	.19**	.10	.28***	-.36***	-				
9. Support for Militaristic Counter-terrorism	.44***	.40***	.34***	.31***	.10	.25***	-.48***	.65***	-			
10. Signing Anti-ISIS Petitions	.31***	.26***	.21***	.25***	.07	.26***	-.37**	.34***	.48***	-		
11. Encouragement of US soldiers fighting ISIS	.19**	.13*	.06	.08	.04	.03	-.22***	.23***	.22***	.23***	-	



12. Anti-Islamic extremism fund disbursement	.36***	.22***	.16**	.36***	-.01	.12*	-.45***	.39***	.62***	.47***	.23***	-
<i>M</i>	36.96†	2.10†	2.07†	.54†	.84†	68.66	11.20	4.23	4.15	.08	.21	34.06
<i>SD</i>	35.86	1.69	1.54	1.88	.98	28.43	6.15	1.48	1.47	.37	.41	32.92
Quartiles	0, 29, 71.8	.75, 2.3, 3.3	.75, 2, 3.3	0, 0, 1	.17, .83, 1.5	--	--	--	--	--	--	--

\*\*\*  $p < .001$  \*\*  $p < .005$  \*  $p < .05$ ; † One sample t-test indicates value significantly different from 0,  $p < .001$  (tested only on variables 1-5). The descriptive statistics for inhumanization reflect differential attribution of secondary emotions unresidualized on differential attribution of primary emotions.

Table 14. Correlations between Ascent Dehumanization and Item-level Trait Ratings of in Study 5.

	Ascent Dehumanization
Mature, responsible (A)	-.43***
Rational and logical (A)	-.41***
Backward, primitive (A)	.39***
Savage, aggressive (A)	.37***
Barbaric, cold-hearted (A)	.36***
Unsophisticated (A)	.35***
Refined and cultured (A)	-.34***
Lacking self-restraint, like animals (A)	.34***
Scholarly, cerebral (A)	-.34***
Coarse, boorish (A)	.33***
Open-minded, able to think clearly about things (M)	-.33***
Lacking morals (A)	.32***
Mechanical and cold, like robots (M)	.31***
Like objects, lacking in passion (M)	.28***
Superficial, lacking in depth (M)	.27***
Emotional, responsive and warm (M)	-.22**
Passive, submissive (M)	-.06

Note. (A) = Animalistic; (M) = Mechanistic \*\*\*  $p < .001$

Table 15. Simultaneous regressions predicting outgroup attitudes and behavior as a function of dehumanization in Study 5.

	Arab Immigration Support R <sup>2</sup> = .13		Support for Drone Strikes R <sup>2</sup> = .14		Support for Militaristic Counter-terrorism R <sup>2</sup> = .27		Signing Anti-ISIS petitions R <sup>2</sup> = .13		Encouragement of US soldiers fighting ISIS R <sup>2</sup> = .03		Anti-Islamic Extremism Fund Disbursement R <sup>2</sup> = .16	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Composite Blatant Dehumanization	-.37†	<.001	.37†	<.001	.53†	<.001	.37†	<.001	.16†	.01	.41†	<.001
Infrahumanization	.05	.35	.01	.84	-.04	.48	-.03	.62	-.00	.96	-.11±	.05

*Note.* † Indicates an estimate that is significant at  $p < .05$  controlling for prejudice. ± Indicates an estimate that is (marginally) significant at  $p < .10$  controlling for prejudice.

Table 16. Simultaneous regressions predicting outgroup attitudes and behavior as a function of dehumanization in Study 5.

	Arab Immigration Support R <sup>2</sup> = .15		Support for Drone Strikes R <sup>2</sup> = .15		Support for Militaristic Counter-terrorism R <sup>2</sup> = .29		Signing Anti-ISIS petitions R <sup>2</sup> = .15		Encouragement of US soldiers fighting ISIS R <sup>2</sup> = .04		Anti-Islamic Extremism Fund Disbursement R <sup>2</sup> = .22	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Ascent Dehumanization	-.22†	.001	.18†	.004	.28†	<.001	.21†	.001	.16†	.02	.27†	<.001
Animalistic Dehumanization	-.14	.08	.24†	.004	.20†	.008	.14	.08	.12±	.15	.12	.14
Mechanistic Dehumanization	-.01	.89	-.02	.80	.07	.33	.01	.95	-.10	.24	-.05	.47
Ipsative Dehumanization	-.18†	.002	.11†	.05	.21†	<.001	.18†	.001	.04	.54	.30†	<.001
Infrahumanization	.05	.35	-.01	.92	-.04	.48	-.03	.63	-.01	.91	-.10	.06

*Note.* † Indicates an estimate that is significant at  $p < .05$  controlling for prejudice. ± Indicates an estimate that is (marginally) significant at  $p < .10$  controlling for prejudice.

## Appendix

### Text for ‘Responses to Injustice’, Study 2b

While on vacation with his family in Afghanistan, Mohammed Jamaluddin was picked up by American forces after they received an anonymous tip that he was a member of the Taliban. He was held at Guantanamo without being officially charged of any crime, and was not given a trial. While there, he was kept in solitary confinement for days, and subjected to several difficult interrogations throughout which he maintained his innocence. During his captivity, his eldest child was married, and his youngest took her first steps and learned to talk. His family faced severe financial struggles, forcing his son had to quit university in order to help out at home. His wife fell into a deep depression from which she never fully recovered. After 5 years in captivity, the U.S. acknowledged that they had no hard evidence against him. He was released without apology or compensation, and sent home.

### Text for ‘Aversive Racism’, Study 2b

Tareq Khalef is an Arab American man who is being considered for a position as a state Supreme Court judge. Judge Khalef was in the top 5% of his law school class, and received high praise for his judicial work from nearly every lawyer who has worked with him. Since this is a high level position, the decision committee has also been focused on personal events, including two from his past. First, Judge Khalef was once cited for spousal abuse by neighbors; he and his wife told the police that it was a misunderstanding, and no charges were filed. Second, there was an allegation of nepotism at a prior job, for which he was eventually cleared after an internal review.

### Perceived Outgroup Threat, Study 3a:

1. “Arabs, as a group, pose a threat to other Americans”
2. “Arabs, as a group, take economic resources away from Americans”
3. “Arabs, as a group, limit the economic opportunities available to Americans”
4. “Arabs, as a group, possess values that directly oppose those of Americans”
5. “Arabs, as a group, hold values that are morally inferior to those of Americans”
6. “Arabs, as a group, endanger the physical safety of other Americans”

### Drone Strike Support, Study 3a:

1. “I support America’s use of drone attacks against suspected militant targets in Pakistan and Afghanistan”
2. “Drone strikes have an unacceptably high rate of civilian casualty” (reverse-scored)
3. “Keeping American soldiers’ lives out of harms way by using drones is more important than ensuring a total lack of civilian casualties in other countries”
4. “Even one civilian death from a drone attack should be enough to make us abandon this as a strategy”

### Militaristic Counter-terrorism, Study 3a:

1. “To put an end to terrorist acts, I think it is OK to use enhanced interrogation techniques”

2. "To put an end to terrorist acts, I think it is OK to use torture"
3. "To put an end to terrorist acts, I think it is OK to use waterboarding"
4. "To put an end to terrorist acts, I think it is OK to target civilians and combatants alike in foreign terrorist strongholds"
5. "To put an end to terrorist acts, I think it is OK to bomb an entire country if it is known to harbor anti-American terrorists"
6. "To put an end to terrorist acts, I think it is OK to target Muslims with extra profiling and surveillance"
7. "I support the war in Afghanistan"
8. "I support continued military efforts abroad to root out potential terrorists"
9. "We should spend more time on diplomatic efforts as opposed to engaging in military activity abroad" (reverse-scored)
10. "We shouldn't be afraid to hunt down anyone who threatens our country anywhere"
11. "We should strike back with brutal force against anyone who seeks to intimidate us"

#### Prejudice, Study 3b:

1. "Most of the terrorists in the world today have a Muslim background"
2. "British Muslims have little appreciation for democratic values"
3. "British Muslims tend to be fanatical"
4. "British Muslims value peace and love" (reverse-scored)
5. "British Muslims tend to be violent"
6. "British Muslims are generally aggressive"

#### Support for Discrimination, Study 4

##### **Education**

1. Move Roma children unreasonably placed in special education schools to public schools (reverse-scored)
2. Cancel currently operating scholarships for Roma children
3. Include equal opportunity and fundamental human rights to the public education curriculum (reverse-scored)
4. Teach about Roma ethnography and culture (reverse-scored)
5. Decreasing the number of Roma teachers

##### **Employment**

6. Increase the employment rate of Roma women to counter trends in employment discrimination (i.e. affirmative action) (reverse-scored)
7. Start state-funded labor market programs for Roma (reverse-scored)

##### **Housing**

8. Decrease access of social housing for the Roma
9. Improve Roma access to housing benefits and debt management services (reverse-scored)

### **Health**

10. Implement health education and awareness programs among the disadvantaged Roma (reverse-scored)
11. Supply information on healthy lifestyle and make services available (e.g. Free health screening) (reverse-scored)

### **Social Support**

12. Support and training of professionals working to provide legal support for anti-Roma discrimination cases (reverse-scored)
13. Support for Roma NGOs involved in human rights violations (reverse-scored)
14. Give state support for Roma theater, museum, gallery, library, independent radio and television (reverse-scored)

### Drone Strike Support, Study 5:

1. "I support the use of drone strikes against suspected ISIS targets"
2. "Keeping American soldiers' lives out of harms way by using drones is more important than ensuring a total lack of civilian casualties in countries that harbor ISIS members"
3. "Drone strikes against ISIS members have an unacceptably high rate of civilian casualty"
4. "Even one civilian death from a drone attack against ISIS should be enough to make us abandon this as a strategy"
- 5.

### Militaristic Counter-terrorism, Study 5:

1. "To put an end to terrorist acts by ISIS, I think it is OK to use enhanced interrogation techniques"
2. "To put an end to terrorist acts by ISIS, I think it is OK to use torture"
3. "To put an end to terrorist acts by ISIS, I think it is OK to use waterboarding"
4. "To put an end to terrorist acts by ISIS, I think it is OK to target civilians and combatants alike in foreign terrorist strongholds"
5. "To put an end to terrorist acts by ISIS, I think it is OK to bomb an entire country if it is known to harbor ISIS terrorists"
6. "To put an end to terrorist acts, I think it is OK to target supporters of ISIS with extra profiling and surveillance"
7. "I support continued military efforts abroad to root out potential ISIS terrorists"
8. "We are being way too soft on ISIS"

9. “We shouldn’t be afraid to hunt down any ISIS member who threatens our country anywhere”
10. “We should strike back with brutal force against members of ISIS who seeks to intimidate us”
11. “We should spend more time on diplomatic efforts as opposed to engaging in military activity towards ISIS” (reverse-scored)
12. “Those ISIS members who have beheaded American journalists deserve to die a slow, painful death.”
13. “The only way to deal with ISIS is by bringing in the heavy artillery.”