They See Us as Less Than Human: Metadehumanization Predicts Intergroup Conflict via Reciprocal Dehumanization

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Although the act of dehumanizing an outgroup is a pervasive and potent intergroup process that drives discrimination and conflict, no formal research has examined the consequences of being *dehumanized by* an outgroup—that is, "metadehumanization." Across 10 studies ($N = 3,440$) involving several real-world conflicts spanning 3 continents, we provide the first empirical evidence that metadehumanization (a) plays a central role in outgroup aggression that is (b) mediated by outgroup dehumanization, and (c) distinct from metaprejudice. Studies 1a and 1b demonstrate experimentally that Americans who learn that Arabs (Study 1a) or Muslims (Study 1b) blatantly dehumanize Americans are more likely to dehumanize that outgroup in return; by contrast, experimentally increasing outgroup dehumanization did not increase metadehumanization (Study 1c). Using correlational data, Study 2 documents indirect effects of metadehumanization on Americans' support for aggressive policies toward Arabs (e.g., torture) via Arab dehumanization. In the context of Hungarians and ethnic minority Roma, Study 3 shows that the pathway for Hungarians from metadehumanization to aggression through outgroup dehumanization holds controlling for outgroup prejudice. Study 4 examines Israelis' metaperceptions with respect to Palestinians, showing that: (a) feeling dehumanized (i.e., metadehumanization) is distinct from feeling disliked (i.e., metaprejudice), and (b) metadehumanization uniquely influences aggression through outgroup dehumanization, controlling for metaprejudice. Studies 5a and 5b explore Americans' metaperceptions regarding ISIS and Iran. We document a *dehumanization-specific* pathway from metadehumanization to aggressive attitudes and behavior that is distinct from the path from metaprejudice through prejudice to aggression. In Study 6, American participants learning that Muslims *humanize* Americans (i.e., metahumanization) humanize Muslims in turn. Finally, Study 7 experimentally contrasts metadehumanization and metahumanization primes, and shows that resulting differences in outgroup dehumanization are mediated by (a) perceived identity threat, and (b) a general desire to reciprocate the outgroup's perceptions of the ingroup. In summary, our research outlines how and why metadehumanization contributes to cycles of ongoing violence and animosity, providing direction for future research and policy.

Keywords: dehumanization, metadehumanization, conflict resolution, intergroup relations, metaperceptions

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In early September 2012, a 14-min video titled *Innocence of Muslims*, dubbed in Arabic, appeared on YouTube. It soon emerged that this video had been shot in the United States by an American resident of Egyptian origin. The video depicted the Prophet Muhammad, an act viewed throughout the Muslim world as an offense. Worse, the Prophet was portrayed not just in a negative light, but specifically in *animalistic* terms: as an incompetent buffoon, a hyper-sexual womanizer lacking in self-control, and a "bloodthirsty" leader of a savage, "ragtag group of men who enjoy killing" (BBC News, 2012). The response to this depiction was swift and violent. Within days of the film's release, anti-American protests erupted in Egypt and quickly spread to American embassies in a number of cities around the world, leaving scores dead and hundreds of others injured, and causing outrage among the American populace (BBC News, 2012). Capturing the mood at the time, Rifaei Taha, a leader of a political party in Egypt, reciprocated the

dehumanization he perceived, calling on then-President Mohammad Morsi to "cut relations with those [American] monkeys and pigs" (CBS News, 2012). How might the more powerful group (here, Americans) react to being dehumanized by the lower status "other"? Might such metaperceptions predict increasingly hostile intergroup responses, including reciprocal dehumanization and collective aggression, thus contributing to the vicious cycles that have marred so many longstanding conflicts?

We sought to specifically explore the effects of this perception that one's own group is perceived by another as *less than fully human*—that is, "metadehumanization." A large and growing literature has detailed the pervasiveness of dehumanization, its uniqueness from prejudice (e.g., Andrighetto, Baldissarri, Lattanzio, Loughnan, & Volpato, 2014; Haslam, 2006; Haslam & Loughnan, 2014; Leyens et al., 2000, 2007) and its potency in contributing to intergroup aggression (Kteily, Bruneau, Waytz, & Cotterill, 2015; Struch & Schwartz, 1989; Viki, Osgood, & Phillips, 2013; see also Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). At the same time, despite the fact that negative metaperceptions more broadly construed (e.g., metastereotypes; metaprejudice) are known to have damaging effects on intergroup relations (Frey & Tropp, 2006; Kamans et al., 2009; Owuamalam, Issmer, Zagefka, Klaβen, & Wagner, 2014; Vorauer, Main, & O'Connell, 1998), no prior work has examined how individuals respond to the (meta)perception that their group is *dehumanized*. If blatant dehumanization is such a strong and unique predictor of negative intergroup outcomes, might metadehumanization also galvanize hostile intergroup processes over and above other negative metaperceptions? Focusing on intensive real-world intergroup conflicts such as the Israeli-Palestinian conflict and American-Muslim relations, the present work considers the effects of perceiving that one's group is not just disliked, but actively and blatantly *dehumanized* by the outgroup.

The central hypothesis of this work is that perceiving that one's ingroup is blatantly dehumanized by an outgroup can provoke individuals to reciprocate by dehumanizing that group in turn, thus increasing support for violent and aggressive collective actions against it. We argue further that this will occur over and above any effects of (a) metaperceptions of prejudice, and (b) any outgroup prejudice that metaprejudice might provoke. That is, we propose a novel *dehumanization-specific* path from metadehumanization to outgroup aggression through reciprocal dehumanization.

The question of how group members respond to perceived outgroup dehumanization of their group is both theoretically important and practically relevant. Our work combines insights from the largely separate literatures on dehumanization and metaperceptions, extending theory in each. We advance the literature on intergroup dehumanization by considering how metaperceptions can lead to intergroup hostility through entrenching dehumanization, and broaden the scope of research on metaperceptions by identifying a unique and consequential *type* of metaperception. Practically, if metadehumanization indeed promotes outgroup dehumanization and more aggressive outgroup attitudes and behavior, it has the potential to contribute importantly to vicious cycles of intergroup conflict (e.g., Bar-Tal, 2000; Kelman, 1987). Therefore, understanding the role of metadehumanization, the mechanisms underlying its effects, and the ways in which it can be

attenuated has important implications for the prospects of intergroup harmony.

Below, we briefly review the existing literatures on each of negative intergroup metaperceptions and dehumanization, and then consider how metadehumanization might uniquely influence outgroup attitudes and behavior.

Responses to Intergroup Metaperceptions

Vorauer et al. (1998) introduced the term *metastereotyping* to describe the content of individuals' cognitions about how they are perceived by an outgroup. This research focused on the dominant group's (e.g., White Canadians) sense of how they are perceived by a subordinate group (e.g., Aboriginal Canadians) in the context of a cross-group interpersonal encounter. These authors showed that White Canadians expected Aboriginal Canadians to stereotype them with a mixture of positive and negative traits: as high status and ambitious, but also as egocentric, unfeeling, selfish, and prejudiced. More important, the more White Canadians expected to be stereotyped, the less they anticipated enjoying contact with an outgroup member, and the more prejudice they exhibited toward the outgroup. Moreover, in an actual interaction with an outgroup member, feeling metastereotyped was associated with threat to individuals' self-concept. This research illustrated the potency of metaperceptions by showing that they played an even bigger role in affecting the intergroup interaction than the stereotypes participants themselves held about the outgroup (e.g., seeing Aboriginal Canadians as lazy; see also Vorauer & Kumhyr, 2001). Consistent with this perspective, other research has documented the aversive effects of engaging in or anticipating intergroup encounters, attributable in part to expectations of (and anxiety about) being negatively evaluated by an outgroup individual (Richeson & Shelton, 2007; Vorauer, Hunter, Main, & Roy, 2000; see also MacInnis & Hodson, 2012).

Expecting to be viewed negatively by another group can lead not only to avoidance of and discomfort with intergroup interactions, but also to increased intergroup bias (Paolini, Hewstone, Voci, Harwood, & Cairns, 2006) and hostility (Kamans et al., 2009). Why might individuals respond to negative metaperceptions by reciprocating that negativity in kind? Research on social identity threat (Branscombe, Ellemers, Spears, & Doosje, 1999) suggests that because individuals derive esteem from their membership in groups (Tajfel & Turner, 2001), they experience devaluation of their group as an aversive threat that they seek to remedy (see also Hornsey, 2008). One means by which individuals might restore ingroup status is by derogating the outgroup responsible for the status threat (e.g., Bourhis, Giles, Leyens, & Tajfel, 1979; Branscombe, Schmitt, & Harvey, 1999; Branscombe & Wann, 1994), especially when the status threat is perceived as illegitimate or offensive, and rejected out of hand (Ellemers, Wilke, & Van Knippenberg, 1993; Vorauer & Sakamoto, 2008; see also Jetten, Schmitt, & Branscombe, 2013).

Indeed, there is good evidence that individuals reciprocate negative evaluations they perceive from others, and become more willing to endorse hostile behavior toward them (Bourhis et al., 1979; Devine, Evett, & Vasquez-Suson, 1996; Kamans et al., 2009). For example, Belgian Flemish speakers experimentally exposed (vs. not exposed) to a French-speaking Belgian confederate insulting the Flemish language were more likely to retaliate

by directing obscenities at the offender (Bourhis et al., 1979). Moroccans in the Netherlands who harbored negative attitudes toward the majority-Dutch and expected them to perceive Moroccans negatively (e.g., as "criminal" or "aggressive") were more likely to endorse aggressive behavior against them (Kamans et al., 2009). Other research has also shown that individuals who activate negative group metaperceptions are more likely to respond with anger and reciprocal negativity toward the offending outgroup (Owuamalam, Tarrant, Farrow, & Zagefka, 2013), and to support collective action to seek redress (Owuamalam et al., 2014). Finally, examining the Eurovision song contest, Doosje and Haslam (2005) showed that reciprocation of outgroup actions and perceptions extends to behavior: members of European nations punished nations that had voted for the ingroup less in previous years by voting for them less; they also *rewarded* nations that had previously favored the ingroup with more votes.

In summary, people think about how they are perceived by other groups, and these metaperceptions are frequently negative in content (Frey & Tropp, 2006). Because they impact the ingroup's social identity, negative metaperceptions are experienced as aversive and threatening. This promotes desires to restore ingroup status, a goal that can be achieved by derogating the offending outgroup in kind. Consistent with this, individuals who perceive that their group is viewed negatively oftentimes reciprocate: they respond with anger, hostile outgroup evaluations, and even support for aggression and collective action against the outgroup, particularly when the metaperception is viewed as inaccurate and offensive. Despite this prior research, no work has examined the (meta)-perception that another group perceives the ingroup as less than fully human. As we develop further below, perceiving that another group blatantly *dehumanizes* the ingroup represents a stark and harsh devaluation of the ingroup that we hypothesize would be viewed as particularly offensive, and is likely to be reciprocated in kind.

Intergroup Dehumanization

In parallel to work on negative metaperceptions, a growing body of research has examined dehumanization and its effects on intergroup (and interpersonal) relations. This research has examined both blatant and subtle forms of dehumanization. Early research focused on the role of blatant dehumanization in licensing aggression. For example, Bandura, Underwood, and Fromson (1975) showed that participants who "mistakenly" overheard an experimenter describe subjects using dehumanizing (vs. humanizing or neutral) language provided more intense shocks to these (purported) participants when they erred (see also Struch & Schwartz, 1989). The facilitating effect of blatant dehumanization on aggression was explained by the fact that dehumanization places the target outside the scope of moral consideration (see also Kelman, 1987; Opotow, 1990). Speaking to the unique power of dehumanization, Kelman (1987) noted that fear or intense dislike do not preclude seeing an enemy as a human, and indeed may even afford that enemy a certain level of respect; in contrast, when another is viewed as less than human, moral restraints are removed and violence is condoned (or even encouraged).

Contemporary research has additionally explored the variety of indirect ways in which we engage in "everyday" dehumanization. Whereas blatant dehumanization involves the active and deliberate denial of others' humanity, subtle dehumanization may occur even outside conscious awareness (Haslam, 2014; Leyens et al., 2000; Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007). The process of viewing athletes as statistics, women as objects, inmates as numbers, and sick individuals as "patients" may involve attributing them fewer traits unique to humans and central to our nature, reflecting a subtle denial of what it means to be fully human (e.g., Haslam, 2006; Waytz, Schroeder, & Epley, 2014; see also Bain, Vaes, & Leyens, 2014). In the intergroup domain, pioneering work on infrahumanization (Leyens et al., 2000) showed that individuals attribute complex secondary emotions (more closely associated with humans than animals) to members of their own group than an outgroup (see also Demoulin et al., 2004). Building on this work, Haslam (2006) posited *two* bases of dehumanization: Animalistic dehumanization, akin to infrahumanization, involves the relative underattribution to others of characteristics (e.g., cognitive aptitude, refinement, and civility) considered unique to humans; mechanistic dehumanization, on the other hand, involves denying others traits (e.g., warmth, emotionality) that, while central to being human, may also be shared with animals (see Haslam, Bain, Douge, Lee, & Bastian, 2005). Importantly, by showing that individuals preferentially attribute *both* positive and negative secondary emotions (and characteristics) to the ingroup, the research on infrahumanization and animalistic or mechanistic dehumanization differentiates these phenomena from simple outgroup negativity (Albarello & Rubini, 2012; Andrighetto et al., 2014; Leyens et al., 2000).

A number of studies have now illustrated the intergroup consequences of subtly dehumanizing outgroups and shown that they can occur in parallel with (or in addition to) outgroup prejudice. For example, research has shown that infrahumanization is associated with decreased helping intentions after Hurricane Katrina (Cuddy, Rock, & Norton, 2007), and that it reduces acceptance of responsibility for past ingroup wrongdoings (Castano & Giner-Sorolla, 2006). Similarly, Andrighetto and colleagues (2014) showed that Italians' unwillingness to help outgroup members (Japanese and Haitians) after a natural disaster is predicted by their animalistic (Haitians) and mechanistic (Japanese) dehumanization of these groups, controlling statistically for outgroup prejudice.

Although this past dehumanization research indicates that both blatant and subtle dehumanization are relevant to intergroup processes and distinct from prejudice, these forms of dehumanization had not been directly contrasted until very recently. Kteily et al. (2015) provided the first formal comparison of the effects of blatant dehumanization relative to subtle dehumanization (i.e., infrahumanization, animalistic/mechanistic dehumanization as assessed by the attribution of uniquely human and human nature traits) on intergroup attitudes and behavior, examining contexts marked by open hostility and intergroup conflict (e.g., American-ISIS relations). Using their newly developed "Ascent of Man measure of blatant dehumanization," these authors argued that blatant dehumanization—so central to past intergroup conflicts—remains a feature of contemporary society. Across a range of contexts they showed that blatant (vs. subtle) dehumanization is a stronger predictor of extreme intergroup attitudes (such as support for torture, and drone strikes) and behavior (such as signing online petitions in support of militarism). The effects of blatant dehumanization held controlling for outgroup prejudice, confirming a distinction between dehumanization and dislike (see also Goff, Eber-

hardt, Williams, & Jackson, 2008; Goff et al., 2014) that also receives neuroimaging support (Bruneau, Jacoby, Kteily, Ligouri, & Saxe, under review).

In summary, considerable progress has been made in understanding when, why, and how we dehumanize other targets. This research suggests that conflictual intergroup contexts continue to be marked by blatant outgroup dehumanization, a potent perception distinguishable from both subtle dehumanization and outgroup prejudice. However, the vast majority of this research has focused on the dehumanization of others (e.g., "they are animal-like"), with little known about the consequences of feeling dehumanized *by* others (i.e., "they think we are animal-like"), a perception that may well feature in the context of intergroup conflict. This lacuna is surprising, given both the prevalence of dehumanization research and the recognized importance of metaperceptions to intergroup relations (e.g., Frey & Tropp, 2006; Yzerbyt, Judd, & Muller, 2009).

Integrating Theorizing on Metaperceptions and Dehumanization

Here we integrate insights from research on negative metaperceptions and on blatant dehumanization. Specifically, combining the knowledge that individuals often reciprocate negativity they perceive from outgroups, and the fact that blatant dehumanization is distinct from outgroup prejudice, we ask whether feeling *dehumanized* (vs. disliked or negatively stereotyped) by another group can uniquely contribute to intergroup hostilities by increasing outgroup dehumanization. There are a number of theoretical arguments in favor of this possibility. First, previous research demonstrates that outgroup dehumanization is conceptually and empirically distinct from outgroup prejudice, and also that it is uniquely associated with outgroup aggression (Kteily et al., 2015). Second, given that (blatant) dehumanization involves extreme devaluation, and outright exclusion from the moral domain (Kelman, 1987) and the most basic shared superordinate identity of "human," metadehumanization should provoke particularly strong threats to ingroup identity. In line with theorizing suggesting that individuals respond in kind to outgroups' negative perceptions of the ingroup (Branscombe et al., 1999), metadehumanization may provoke very harsh responses, including reciprocal dehumanization of—and aggression toward—the offending outgroup.

Some recent research in the interpersonal domain provides support for our notion that individuals dehumanize those who they perceive to dehumanize them. Bastian and Haslam (2010) showed that people socially excluded (vs. included) in a Cyberball game were significantly more likely to report that that target treated them as less human (Bastian & Haslam, 2010, Study 2). This led participants to dehumanize the ostracizer, primarily by attributing them fewer traits considered central to human nature, such as emotionality and warmth (see Haslam, 2006). Relatedly, Bastian and Haslam (2011) found that participants who were asked to vividly recall a time when they were treated as irrelevant or unimportant (i.e., mechanistically dehumanized) reported feeling more numbness, lethargy, and sadness (presumably reflecting the pain of the metaperception), but also more anger (presumably toward the perpetrator). Thus, existing research on interpersonal processes suggests that feeling excluded or undervalued by others can be painful, and we may reciprocate that negativity.

In the present research, we examine blatant (vs. subtle) forms of metadehumanization, and focus on conflictual intergroup (vs. interpersonal) contexts, which tend to involve greater competitiveness and aggression (Wildschut, Pinter, Vevea, Insko, & Schopler, 2003). In this context, we reason that individuals will be highly likely to feel threatened by the outgroup's perception and reciprocate any dehumanization they perceive. Extending prior work, we distinguish for the first time between metadehumanization and other negative metaperceptions.

Hypotheses

In line with prior research on responses to negative metaperceptions, we hypothesized that perceiving that the ingroup is blatantly dehumanized by an outgroup would predict greater blatant dehumanization of that outgroup (see Figure 1 for a diagram of our overall conceptual model). Consistent with previous work (Kteily et al., 2015), we hypothesized that outgroup dehumanization would itself be associated with support for aggressive intergroup attitudes and behaviors, such as support for torture and collective aggression, independent of outgroup prejudice (i.e., dislike). Thus, we expected that metadehumanization would indirectly affect aggressive outgroup attitudes and behavior via outgroup dehumanization (i.e., a significant a^*b path; see Figure 1). Consistent with previous research highlighting the importance of metaperceptions beyond outgroup perceptions (e.g., Vorauer et al., 1998), we also considered the possibility that metadehumanization might exert direct effects (i.e., significant c path) on the outcome variables. We hypothesized that effects of metadehumanization would be theoretically independent from metaprejudice, or the perception that the outgroup *dislikes* the ingroup. Finally, we hypothesized that the effects of metadehumanization would be unique from political ideologies such as social dominance orientation, right-wing authoritarianism, and conservatism, previously shown to be associated with dehumanization (e.g., Costello & Hodson, 2010; Hodson & Costello, 2007; Kteily et al., 2015) and aggressive intergroup attitudes (e.g., Hetherington & Suhay, 2011; Kteily, Ho, & Sidanius, 2012; Kteily, Cotterill, Sidanius, Sheehy-Skeffington, & Bergh, 2014).

Overview of Studies

We examined our hypotheses across 10 samples. In Studies 1a and 1b we used two separate experimental manipulations to examine whether metadehumanization causes outgroup dehumanization among community samples of Americans in the context of American-Arab relations (Study 1a; $N = 210$) and American-Muslim relations (Study 1b; $N = 214$). In Study 1c, we experimentally examined whether there was any evidence for the reverse causal pathway (i.e., from dehumanization of Muslims to metadehumanization; $N = 213$ Americans). In Study 2, we cross-sectionally examined whether metadehumanization in American-Arab relations was associated with hostile intergroup attitudes and policy support through greater outgroup dehumanization ($N = 270$). In Study 3, we again tested the metadehumanization → dehumanization → hostile attitudes pathway, but among a large sample of ethnic Hungarians ($N = 906$), further controlling for outgroup prejudice toward the Roma. In Study 4, we considered Israelis' ($N = 493$) metaperceptions about Palestinians, examining
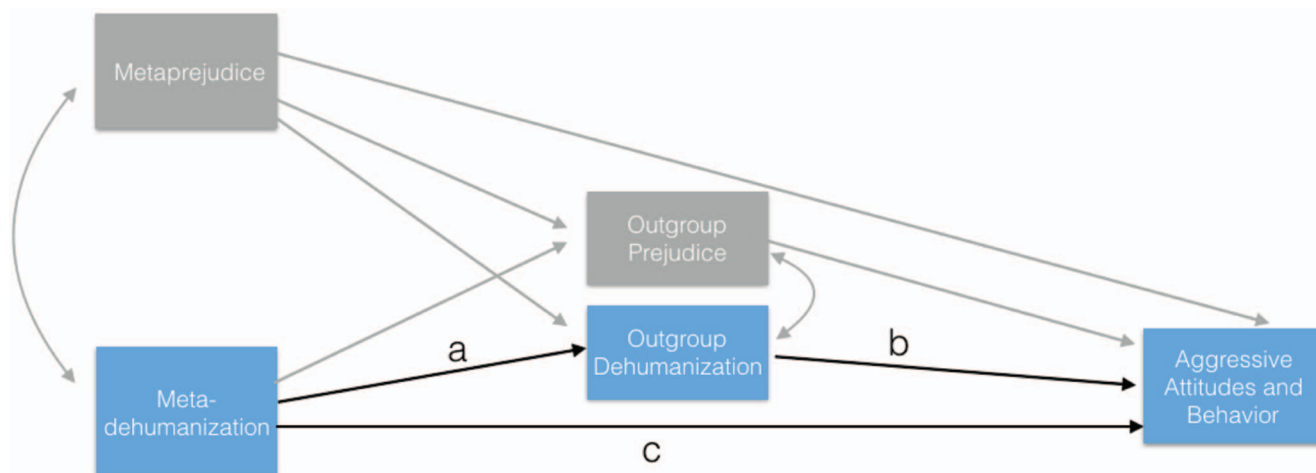
Figure 1. Conceptual diagram of the proposed theoretical model, in which metadehumanization influences aggressive attitudes and behavior via outgroup dehumanization, controlling for metaprejudice, outgroup prejudice, and political ideology (not shown). Primary variables (blue) and paths (black) of interest appear highlighted. See the online article for the color version of this figure.

not only metadehumanization but also metaprejudice ("*they dislike us*"), to address whether metadehumanization effects predict beyond metaperceptions that are simply negative in valence. In Studies 5a ($N = 366$) and 5b ($N = 310$), we explored the extent to which Americans feel dehumanized by ISIS (in the aftermath of the Charlie Hebdo attacks; Study 5a) and Iran (shortly after the announcement of the nuclear deal; Study 5b), and examined how this was uniquely associated with hostile attitudes and behavior. In Study 6 ($N = 211$), we experimentally examined whether learning that Muslims humanized Americans (i.e., meta-*humanization*) could reduce outgroup dehumanization. Finally, in Study 7 ($N = 231$), we examined the mechanism underlying the relationship between metaperceptions about outgroup ratings of ingroup humanity and outgroup dehumanization.

Study 1a

In Study 1a, we sought to examine the experimental effect of metadehumanization. Specifically, we tested our prediction that Americans who learn that they are dehumanized by Arabs will be more likely to dehumanize Arabs in turn.

Method

Participants. We collected data from 216 participants through Amazon Mechanical Turk, a reliable and high-quality platform for recruiting diverse samples (Buhrmester, Kwang, & Gosling, 2011) in June 2015. We excluded 6 participants not native to the U.S. leaving 210 participants (M age $= 31.68$, $SD = 11.55$; 51.9% men; 74.8% Whites, 9.0% Blacks; 7.6% Asian American; 5.2% Latino/ Hispanic American; 1.0% Native American; and 2.4% Biracial/ mixed race).

Procedure. Participants filled out demographic information and items assessing patriotism and nationalism, and were then told that we were interested in "people's social, economic, and political perceptions and how they compare across cultures." Participants

read that we had previously conducted "an online survey very similar to the one you are now completing among large samples of Arabs living in each of 5 different and diverse countries: Lebanon, Egypt, Saudi Arabia, Jordan, and Yemen." The survey was purported to measure Arabs' perceptions of how the political system in their societies functions, their sense of corruption in their social system, their attitudes toward religion, and their perception of Americans. Participants were then told that they would see some of the questions that Arab participants answered and their responses.

Participants were then provided with the Arab responses. Specifically, participants received demographic information about the purported Arab sample, including country of origin, average age, and religion. They also received (filler) information about their supposed social networks, and their attitudes relating to political transparency in their country. Next, participants saw the results of Arabs' (purported) perception of Americans, with all participants learning that Arabs felt warmer toward their own group (Arabs) than toward Americans (i.e., Arab prejudice toward Americans was held constant).

After seeing Arab warmth toward Americans, participants were provided with the information central to our manipulation: Arab ratings of Arabs and Americans on the Ascent Dehumanization scale (Kteily et al., 2015; see Figure 2 for depiction of the Ascent scale). In the control condition, participants learned that Arabs had rated Arabs and Americans to be highly and equally evolved (i.e., around 96 on the unmarked 0–100 Ascent scale). In the experimental condition ("high metadehumanization"), participants learned that Arabs had rated Arabs as highly evolved (i.e., 96 on the Ascent scale), but rated Americans substantially lower (i.e., around 67 on the Ascent scale). After reading this information, participants saw a final item indicating Arabs' purported feelings about their family's economic situation (constant across conditions).

Consistent with the cover story that we were interested in cross-cultural comparisons between Arabs and Americans on a
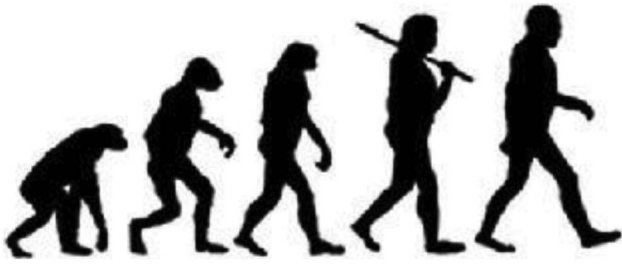
Figure 2. The "Ascent of Man" measure of blatant dehumanization. Scores are provided using a slider scale ranging from 0–100, with 0 corresponding to the left side of the image (i.e., quadrupedal human ancestor), and 100 corresponding to the right side of the image ('full' modern-day human). This figure was originally published in *Kteily, Bruneau, Waytz, & Cotterill, 2015, JPSP,* Figure 1.

range of metrics, we next gave participants a series of filler questions that matched the types of questions we had supposedly asked Arabs (e.g., perceptions of corruption in the United States; questions about their social network). Subsequently, we moved on to the question of central interest: blatant dehumanization of Arabs.

Outcome measures. We first assessed metadehumanization and metaprejudice, presented in randomized order.

Metadehumanization. As a manipulation check, we assessed the extent to which participants perceived that Arabs dehumanized Americans. Specifically, we asked participants to indicate their agreement with each of the following items on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale: "Arabs perceive Americans to be sub-human," "Arabs think of Americans as animal-like," "Arabs see Americans as less evolved than other groups," "Arabs think Americans are beasts," and "Arabs consider Americans to belong to a lower form of civilization" ($\alpha = .95$).

Metaprejudice. We assessed the extent to which participants felt that they were *disliked* by Arabs on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale, asking them to indicate their agreement with the following two items: "Arabs feel cold towards Americans," and "Arabs do not have positive attitudes towards Americans," $r = .78$, $p < .001$. Next, we assessed dehumanization and prejudice, presented in randomized order.

Dehumanization. We assessed participants' dehumanization of Arabs by using the Ascent scale of blatant dehumanization (Kteily et al., 2015). Specifically, participants rated the average "evolvedness" of members of a series of groups, including Arabs and Americans, using an unmarked slider bar. The scale is scored from 0–100, with 100 indicating full humanity. To assess dehumanization of Arabs, we reversed scores such that higher scores indicate more dehumanization.

Prejudice. We assessed prejudice toward Arabs using the widely used feeling thermometer (Haddock, Zanna, & Esses, 1993). Specifically, participants rated how warm they felt toward members of a series of groups, including Arabs, using an unmarked slider bar anchored at 0 (*very cold and unfavorable*) and 100 (*very warm and favorable*). Scores were reversed such that higher scores indicate more prejudice toward Arabs.

Attention check. Finally, we asked participants two questions designed to assess their level of attention to the experimental materials that they had been provided. Each of the two questions

tested whether they could correctly recall which topics had *not* been mentioned in the survey report purportedly completed by Arabs. We excluded participants ($n = 55$) who incorrectly answered one of these two questions, leaving a total sample of 155 participants for the remaining analyses (M age $= 32.06$, $SD = 11.45$; 51.0% men; 78.1% Whites; 7.1% Blacks; 6.5% Asian American; 5.8% Latino/Hispanic American; and 2.6% Biracial/mixed race).[1]

Results

We first assessed whether our manipulation had successfully influenced participants' perception of the extent to which Arabs dehumanized Americans. Indeed, those participants who saw the survey results suggesting that Arabs dehumanize Americans were significantly more likely to report that they were dehumanized by Arabs ($M = 4.05$, $SD = 1.65$) than were those who read that Arabs perceived both Arabs and Americans as highly (and equally) evolved ($M = 2.36$, $SD = 1.29$), $F(1, 153) = 49.20$, $p < .001$, $\eta_p^2 = .24$. There was also a significant but smaller effect of the metadehumanization manipulation on participants' sense that they were disliked by Arabs (high metadehumanization condition: metaprejudice $M = 4.88$, $SD = 1.25$; low metadehumanization condition: metaprejudice $M = 4.29$, $SD = 1.32$), $F(1, 153) = 8.18$, $p = .005$, $\eta_p^2 = .05$.

We next examined how the experimental manipulation influenced participants' own dehumanization of, and prejudice toward, Arabs. As predicted, American participants in the high metadehumanization condition were significantly more likely to dehumanize Arabs in turn ($M = 28.22$, $SD = 27.92$) than those in the control condition ($M = 16.73$, $SD = 22.74$; $F(1, 153) = 7.81$, $p = .006$, $\eta_p^2 = .05$).[2] Those in the high metadehumanization condition also reported greater prejudice toward Arabs ($M = 48.93$, $SD = 26.52$) than those in the control condition ($M = 38.82$, $SD = 25.49$), $F(1, 153) = 5.82$, $p = .02$, $\eta_p^2 = .04$.[3]

In summary, the results of Study 1a showed support for our hypothesis that being exposed to information that one's ingroup is dehumanized by an outgroup can, in turn, cause dehumanization of that outgroup. One potential limitation of Study 1a, however, is that we manipulated metadehumanization by giving participants information about how they were perceived by Arabs using the same scale (Ascent) that was used to assess outgroup dehumanization. This may have resulted in participants in the metadehumanization condition rating Arabs lower in part simply because seeing lower ratings of another group on the Ascent scale licensed

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[1] Including the participants who incorrectly answered the attention check questions resulted in the same significant pattern on our primary outcome measure (dehumanization), $F(1, 208) = 4.90$, $p = .03$, $\eta_p^2 = .02$.

[2] We note that the experimental effect of the metadehumanization manipulation on Arab dehumanization was unaffected by including metaprejudice ratings as a covariate (after its association with metadehumanization ratings was partialed out), $F(1, 152) = 7.89$, $p = .006$, $\eta_p^2 = .05$.

[3] We also examined difference scores (i.e., ratings of American vs. Arab humanity) rather than absolute dehumanization scores. We obtained similar results ($F(1, 153) = 5.56$, $p = .02$, $\eta_p^2 = .035$). We focus here on absolute outgroup ratings rather than difference scores because the majority of our studies examine the perception that the outgroup dehumanizes the ingroup in absolute (rather than relative) terms. Nevertheless, we obtain similar patterns across studies when a relative dehumanization score is used.

(or shifted norms about) outgroup dehumanization. Furthermore, Study 1a compared metadehumanization to a condition in which participants learned that they were perceived by the outgroup as *equally* human, making it possible that participants in that condition felt *humanized* by the outgroup. In Study 1b, we sought to examine the effect of metadehumanization through a different experimental manipulation. Specifically, using a text-based prime, we again tested our prediction that Americans who learn that they are dehumanized by an outgroup (here, Muslims) would be more likely to dehumanize that group in turn. Here, we compared individuals in the metadehumanization condition to a control condition in which participants received no information about how they were perceived by the outgroup.

Study 1b

Method

Participants. We collected data from 225 participants through Amazon Mechanical Turk in October 2015. Three Muslim participants, six nonnative U.S. participants and two participants who asked that their data be excluded from the study were removed from analysis; we focused our analyses on the 214 remaining participants (M age = 33.79, SD = 10.22; 56.1% men; 72.4% Whites, 9.8% Blacks; 7.0% Asian American; 5.6% Latino/Hispanic American; 2.8% biracial; 0.9% Native American; 0.5% Middle Eastern/Arab American; and 0.9% Other).[4]

Procedure. After completing demographic information and items assessing conservatism, patriotism and nationalism, participants were told that we were interested in "people's social, economic, and political perceptions and how they might be similar or different across cultures." In the control condition, participants were simply asked to click ahead to the survey questions. In the experimental condition, participants read an article purportedly published in the Boston Globe describing the results of a (fictional) report by the United Nations' Commission on Global Relations, examining public perceptions of Americans in the Muslim world. The news article was entitled "In large parts of Muslim world, Americans perceived as 'animals'" (see Supplementary Materials for full text). To invoke metadehumanization, the article noted that Muslims across a number of Muslim-majority countries perceived Americans as "brutes, lacking in self-control and sophistication," and highlighted quotations from Muslim respondents describing Americans in animalistic terms. The report noted that these perceptions of Americans were highly normative, held by a majority of Muslims.[5] Participants' then completed two outcome measures—dehumanization and prejudice—in randomized order.

Outcome measures.

Dehumanization. We assessed participants' dehumanization of Muslims in two ways. First, participants rated several groups on the Ascent scale of blatant dehumanization (Kteily et al., 2015), including Muslims and Americans; as in Study 1a, we focused on (reverse-scored) ratings of the outgroup (here, Muslims). Second, we assessed blatant dehumanization of Muslims by asking participants to rate the extent to which a series of animalistic traits described Muslims, adapted from Bastian, Denson, and Haslam (2013) and expanded on in Kteily et al. (2015, Study 5): "backward," "savage," "lacking morals," "cold-hearted," "scientifically/technologically advanced," "primitive," "aggressive," "barbaric,"

"refined" (reverse-scored), "rational" (reverse-scored), "capable of self-control" (reverse-scored), "mature" (reverse-scored), "cultured" (reverse-scored), "logical" (reverse-scored), and "responsible" (reverse-scored). Ratings were made for these traits on a scale anchored at 1 (*not at all*) and 7 (*extremely so*; α = .96). As in Kteily et al. (2015, Study 5), we also assessed blatant dehumanization as a composite by standardizing the two dehumanization scores (i.e., Ascent and the animalistic trait composite) and averaging them together, r = .60, p < .001.

Prejudice. We assessed prejudice toward Muslims as in Study 1a. After presenting all outcome measures, we provided all participants in the experimental condition with a second text describing Muslims' perceptions of Americans in a humanizing light, in an effort to help reverse the negative effects of the manipulation. Participants were then thoroughly debriefed.

Results

Analyses indicated a chance failure of randomization with respect to conservatism: specifically, although conservatism was assessed before the experimental manipulation, and despite the large sample size, participants in the metadehumanization condition (vs. control) were significantly more conservative, $F(1, 212) = 10.01$, $p = .002$.[6] Thus, we included conservatism as a covariate in all analyses reported below.

We examined whether the experimental manipulation influenced participants' dehumanization of, and prejudice toward, Muslims. We began by examining the (standardized) blatant dehumanization composite. As predicted, Americans who read the article suggesting that Muslims dehumanized Americans (M = .13, SE = .08) were significantly more likely to themselves dehumanize Muslims than participants in the control condition (M = −.12, SE = .08; $F(1, 211) = 4.68$, $p = .03$, $\eta_p^2 = .02$). Examining each of the two dehumanization measures in isolation, we observed a significant effect on the animalistic trait ratings (metadehumanization condition: M = 4.08, SE = .13; control condition: M = 3.65, SE = .13; $F(1, 211) = 5.56$, $p = .02$, $\eta_p^2 = .03$, and a nonsignificant trend using the Ascent scale (metadehumanization condition: M = 31.38, SE = 3.10; control condition: M = 24.71, SE = 3.01; $F(1, 211) = 2.34$, $p = .13$, $\eta_p^2 = .01$.[7,8]

In addition to the effects on dehumanization, we also observed that participants in the metadehumanization condition reported

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[4] One participant reported an age of 0, which was recoded as a missing value.

[5] Results from a pretest among a separate sample of non-Muslim native Americans on mTurk (n = 209; M age = 36.73, SD = 12.09; 51.2% women) indicated that this prime was successful in increasing metadehumanization (assessed on a 1–7 scale) relative to control (experimental condition: M = 4.95, SD = 1.68; control condition: M = 3.34, SD = 1.58; F (1, 133) = 32.28, p < .001, η_p^2 =.20). This pretest included a third condition testing whether a metahumanization prime (see Study 6) decreased metadehumanization relative to control.

[6] As in the other studies with American participants, conservatism was assessed using three items, reflecting political party preference (1 = *strong Democrat*, 7 = *strong Republican*), and economic and social conservatism (1 = *very Liberal*, 7 = *very Conservative*; M = 3.29, SD = 1.56; α = .91)

[7] All analyses were significant when conservatism was not a covariate.

[8] Two of the animalistic traits were mentioned in the metadehumanization prime (i.e., "savage" and "self-control"). Results were the consistent if these two items were removed from the animalistic scale and the blatant dehumanization composite.

greater prejudice toward Muslims ($M = 55.35$, $SE = 2.80$) than those in the control condition ($M = 45.18$, $SE = 2.71$; $F(1, 210) = 6.68$, $p = .01$, $\eta_p^2 = .03$).

In summary, the results of Study 1b converged with those of Study 1a: receiving information that one's ingroup is dehumanized by an outgroup, either through a graphical/visual presentation (Study 1a) or through a text-based manipulation (Study 1b), caused dehumanization of (and prejudice toward) that outgroup in turn. Aside from showing that the effects of metadehumanization on dehumanization held across distinct manipulations, Study 1b showed that metadehumanization increased outgroup dehumanization relative to a control condition in which participants received no information about how they were perceived by the outgroup.

Despite our evidence that metadehumanization can cause outgroup dehumanization, it remains possible that the reverse causal pathway also holds. That is, when individuals dehumanize another group, they may become more likely to feel dehumanized *by* that group: this might occur, for example, simply because an animalistic outgroup seems more likely to itself dehumanize others, because we infer a norm of reciprocal dehumanization among those we dehumanize, or as a motivated rationalization for one's own outgroup dehumanization. In Study 1c, we set out to test the reverse causal pathway from outgroup dehumanization to metadehumanization.

Study 1c

Method

Participants. We collected data from 220 participants through Amazon Mechanical Turk in October 2015. Six participants nonnative to the United States and one participant who asked that their data be excluded from the study were removed from analysis, leaving 213 participants (M age $= 33.51$, $SD = 10.56$; 50.2% women; 79.3% Whites; 5.6% Blacks; 5.6% Asian American; 5.6% Latino/Hispanic American; 2.8% Biracial; and 0.9% Native American).

Procedure. The methodology of Study 1c was similar to Study 1b. Specifically, after filling out the same demographics and ideological measures as in Study 1b, participants were randomly assigned into a control or experimental condition. In the control condition, participants were asked to click ahead to the survey questions. In the experimental condition, participants were asked to "read the following newspaper article describing the conclusions of a recently released report about Muslim-majority societies."

We used a text prime very similar to that used in Study 1b (but here manipulating outgroup dehumanization). Specifically, we presented participants with a (purported) Boston Globe article on the results of a (fictional) report from the United Nations' Commission on Human Rights. This article was entitled "In large parts of Muslim world, violence harkens to Dark Age" (see Supplementary Materials for full text). The report purportedly examined the use of violence as a means of punishment and dispute in the Muslim world. It detailed the use of practices such as public whippings and hand amputations as punishment for stealing, and death by stoning and public beheadings as punishment for adultery and drug dealing, which were described using animalistic terms such as "brutal." The report also noted that Muslim survey respon-

dents reported using (and approving of) a number of aggressive actions (e.g., slapping, punching, or biting) in response to personal disputes, which were (purportedly) responsible for a high number of deaths in the Muslim world. Finally, the report noted that these violent actions had deep cultural roots, and were highly normative.[9] Participants then completed two outcome measures—metadehumanization and metaprejudice—in randomized order.

Outcome measures.

Metadehumanization. We assessed metadehumanization as in Study 1a (but with respect to Muslims), with the exception that the item referring to "beasts" was replaced with "Muslims consider Americans to be uncivilized." Items were assessed on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale ($\alpha = .95$).

Metaprejudice. We assessed metaprejudice using the following items: "Muslims feel cold toward Americans," "Muslims do not have positive attitudes towards Americans," "Muslims don't like Americans much," "Muslims don't think of Americans in a friendly light," "Americans are not the favorite people of Muslims," "Muslims are very fond of Americans" (reverse-scored) and "Muslims feel warm toward Americans" (reverse-scored). The same scale anchors as for metadehumanization was used ($\alpha = .94$).

Results

Studies 1a and 1b examined the effect of metadehumanization primes on dehumanization; here, we examined the opposite: whether increasing dehumanization of Muslims influenced participants' sense that Muslims dehumanized Americans. We found that participants primed to dehumanize Muslims did not report significantly higher levels of metadehumanization ($M = 3.68$, $SD = 1.43$) than those in the control condition ($M = 3.43$, $SD = 1.58$; $F(1, 211) = 1.53$, $p = .22$, $\eta_p^2 = .007$). The same was true for metaprejudice: participants primed to dehumanize Muslims showed slightly higher levels of metaprejudice ($M = 4.95$, $SD = 1.19$) than those in the control condition ($M = 4.70$, $SD = 1.24$), but this trend was not significant ($F(1, 211) = 2.26$, $p = .13$, $\eta_p^2 = .01$).

The results of Studies 1a–1c illustrate that whereas metadehumanization caused outgroup dehumanization, the reverse causal pathway—examined using a very similar sample size and power to detect a comparable effect—was not reliable. Although the existence of the reverse causal pathway cannot be definitively ruled out on the basis of these studies (a point we develop further in the General Discussion), our results are more consistent with the notion that feeling dehumanized by another group induces dehumanization of that group, rather than the reverse.

In Studies 2–5b, we assessed individual variation in (measured) metadehumanization perceptions across a series of consequential real-world intergroup conflicts, examining how these perceptions

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[9] Results from a pretest using an independent sample of non-Muslim Americans on mTurk ($N = 159$; M age $= 34.14$, $SD = 11.50$; 58.5% men) indicated that this prime was successful in increasing dehumanization of Muslims, assessed using the blatant dehumanization composite described in Study 1b. Control condition: $M = -.24$, $SD = .79$; Experimental condition: $M = .23$, $SD = .94$; $F(1, 157) = 11.56$, $p < .001$, $\eta_p^2 = .07$ (effects were also significant using each of the Ascent scale and the animalistic trait ratings alone).

might be uniquely associated with a range of hostile intergroup attitudes and behaviors via outgroup dehumanization.

Study 2

In Study 2 we examined the relationship between Americans' metadehumanization with respect to Arabs, their dehumanization of Arabs, and measures such as torture support and support for drone strikes. Specifically, we examined whether any effects of metadehumanization on these variables might be explained in part by metadehumanization's effects on outgroup dehumanization. To ensure that any association between metadehumanization and intergroup outcomes was unique from any potential effects of political ideology, we controlled for a series of ideological variables—social dominance orientation, right-wing authoritarianism, and political conservatism—known to be strongly associated with aggressive intergroup outcomes generally, and dehumanization in particular (e.g., Kteily et al., 2012, 2014, 2015; Leidner, Castano, Zaiser, & Giner-Sorolla, 2010).

Method

Participants. American residents ($N = 286$) completed the study online through Amazon Mechanical Turk in February 2014. As in Studies 1a–c, we focused on the 271 native-born U.S. participants and further excluded one Arab American participant (M age $= 33.18$, $SD = 11.78$; 50.2% women; 80.3% Whites; 5.2% Blacks; 4.8% Asian American; 4.5% Latino/Hispanic American; 3.3% Biracial; 1.5% Native American; and 0.4% Other).

Measures. The following constructs were assessed in fixed order.

Social dominance orientation. We used eight items from the SDO-6 scale (Pratto, Sidanius, Stallworth, & Malle, 1994; $\alpha = .89$) to assess participants' support for hierarchy between groups.

Right-wing authoritarianism. We used a 12-item version of the RWA scale (Altemeyer, 1988; $\alpha = .87$) to tap conventionality, submission to authority, and aggressiveness against norm violators.

Political conservatism. We assessed political conservatism with three items. Two items assessed the extent to which participants rated their social and economic views, respectively, on a continuum from 0 (*very liberal*) to 100 (*very conservative*). One item assessed political party preference on a scale from 0 (*strong democrat*) to 100 (*strong republican*); $\alpha = .88$.

Metadehumanization. We assessed metadehumanization with six items: "Arabs perceive Americans to be sub-human," "Arabs think of Americans as animal-like," "Arabs see Americans as less evolved than other groups," "Arabs think Americans are beasts," "Arabs consider Americans to belong to a lower form of civilization," and "Arabs think of Americans as vermin" ($\alpha = .97$). All responses were made using unmarked sliders anchored at 0 (*strongly disagree*) and 100 (*strongly agree*).

Dehumanization. We assessed dehumanization as in Study 1a, focusing on ascent ratings of Arabs.

Emotional hostility. We assessed emotions toward Arabs by providing participants with seven emotions (anger, disgust, contempt, respect, and sympathy, fear, and envy), from which we used the first five emotions toward Arabs for our assessment of emotional hostility (respect and sympathy were reverse-scored; $\alpha = .80$).

Drone support. We assessed support for drone strikes using five items (e.g., "I support America's use of drone attacks against suspected militant targets in Yemen"; $\alpha = .87$; see Kteily et al., 2014, 2015).

Surveillance of Arabs. Support for surveillance of Arabs was assessed using a 4-item scale (sample item: "I think American intelligence services should place extra effort on the surveillance of Arab immigrants to the United States"; $\alpha = .91$; see Supplemental Materials for full scale). All responses were made using unmarked sliders anchored at 0 (*strongly disagree*) and 100 (*strongly agree*); the same scale was used for all other constructs assessed below (unless otherwise specified).

Arab distancing. We assessed Americans' support for distancing Arabs using six items tapping into a broad set of attitudes and social policies reflecting social rejection of Arabs and resistance to Arab integration into U.S. society (e.g., "It would bother me if my son or daughter ended up marrying an Arab"; "The U.S. government should set up programs to help Arab immigrants integrate into U.S. society" (reverse-scored; $\alpha = .79$; see Supplementary Materials).

Opposition to Arab immigration. We assessed opposition to Arab immigration by asking participants to assign a limited number of immigrant visas to various groups (e.g., East Asians, Arabs, or Eastern Europeans), and then taking the reverse-scored proportion of visas assigned to Arabs (Kteily et al., 2015).

Torture support. We assessed support for torture by averaging participant responses to five items taken from Kteily et al., 2014, 2015 (e.g., "To put an end to the war on terror in the Middle East, I think it is OK to use enhanced interrogation techniques"; $\alpha = .91$; see Supplementary Materials).

We also included items about perceived American and Arab power, perceptions of American foreign policy, items assessing patriotism and nationalism, and items about support for intervention in Syria for exploratory purposes. We did not use these variables for our primary analyses and they are not discussed further.

Results

Descriptive statistics and variable intercorrelations are presented in Table 1. As can be seen in the table, metadehumanization was significantly associated with dehumanization of Arabs, $r = .38$, $p < .001$. Moreover, both metadehumanization and Arab dehumanization were significantly correlated with each of the outcome measures.

We were primarily interested in examining whether metadehumanization was associated with anti-Arab attitudes and policy support through outgroup dehumanization. We included political ideology (i.e., each of SDO, RWA, and political conservatism) as control variables, and examined the full model using Hayes' (2013) PROCESS macro (Model 4), with 1,000 bootstrap resamples. We modeled each outcome measure separately (see Figure 3 for an example outcome, "torture of Arabs").

In support of our predictions, the indirect effect from metadehumanization to anti-Arab attitudes and policy support through Arab dehumanization was significant for each of the criterion variables (see Table 2). Indeed, in line with the experimental manipulations in Studies 1a and 1b, metadehumanization was strongly associated with outgroup dehumanization

Table 1

Descriptive Statistics and Variable Intercorrelations in Study 2

Measures	1	2	3	4	5	6	7	8	9	10	11
1. Metadehumanization	—										
2. Dehumanization	.38***	—									
3. Surveillance of Arabs	.43***	.42***	—								
4. Emotional hostility	.51***	.59***	.48***	—							
5. Torture support	.36***	.34***	.59***	.48***	—						
6. Drone support	.37***	.30***	.64***	.47***	.59***	—					
7. Arab distancing	.32***	.27***	.36***	.52***	.28***	.44***	—				
8. Opposition to Arab immigration	.29***	.43***	.45***	.47***	.31***	.39***	.44***	—			
9. SDO	.26***	.19**	.32***	.35***	.44***	.42***	.44***	.18**	—		
10. RWA	.37***	.24***	.57***	.41***	.48***	.63***	.36***	.27***	.38***	—	
11. Political Conservatism	.26***	.12	.40***	.29***	.34***	.42***	.39***	.22***	.50***	.57***	—
M	43.44	18.23	31.61	34.61	19.67	40.85	55.00	84.68	26.78	43.20	39.47
SD	29.37	27.68	28.00	20.59	24.41	25.96	21.93	6.82	20.98	19.70	26.18

Note. RWA = right-wing authoritarianism; SDO = social dominance orientation.
** $p < .01$. *** $p < .001$.

($\beta = .32$, $b = .30$, $p < .001$, 95% confidence interval [CI] [.19, .41]).[10] Outgroup dehumanization was itself uniquely associated with each of the outcome variables (Surveillance of Arabs: $\beta = .24$, $b = .25$, $p < .001$, 95% CI [.15, .35]; Emotional Hostility: $\beta = .42$, $b = .32$, $p < .001$, 95% CI [.25, .39]; Torture support: $\beta = .16$, $b = .14$, $p = .004$, 95% CI [.05, .24]; Drone support: $\beta = .14$, $b = .13$, $p = .004$, 95% CI [.04, .23]; Arab distancing: $\beta = .16$, $b = .13$, $p = .006$, 95% CI [.04, .22]; Opposition to Arab Immigration: $\beta = .36$, $b = .09$, $p < .001$, 95% CI [.06, .12]).

After accounting for its indirect effects via dehumanization (as well as political ideology), metadehumanization had direct effects on each of the outcome variables, with the exception of opposition to immigration. Across all outcome measures, metadehumanization exhibited significant total effects. In summary, these data illustrate the potency of metadehumanization as a unique contributor to intergroup hostility, and demonstrate that a part of its role can be accounted for by its effect on outgroup dehumanization.

Study 3

In Study 3, we extended the examination of metadehumanization to a different cultural context, specifically Hungarians' responses to perceived dehumanization of the ingroup by the Roma population. Although the majority Hungarian population is advantaged relative to the minority Roma population, the discourse surrounding the Roma describes them as self-segregating from society and expressing disdain for the majority population by targeting them for theft and other "parasitic" actions, implying a (perceived) disregard for the majority Hungarians and their suffering. Therefore, we reasoned that majority Hungarians could perceive that they themselves are dehumanized by the Roma, a perception we hypothesized would be associated with dehumanizing the Roma and aggressive intergroup attitudes. Study 3 also extended Study 2 by further controlling for outgroup prejudice in testing our theoretical model.

Method

Participants. We used a collection service (Solid Data SIA) to obtain a large sample online from Hungary in August, 2014 for an omnibus study (we focus on the variables relevant to the current work).[11] The survey was translated into Hungarian by a native-speaking social psychologist. Of the 1,002 respondents, 12 were excluded for being Roma, and 84 for answering at least one of two attention check questions incorrectly, leaving 906 participants (M age = 42.04, SD = 12.75; 50.7% men).

Measures. For all measures not already assessed on a 0–100 scale, scores were converted from their original scales (reported below) to a 0–100 scale for ease of comparison with previous studies. Variables were presented in fixed order.

Conservatism. Political conservatism was assessed using two items asking for self-placement on the left-right political spectrum (1 = Left; 7 = Right) and the liberal-conservative (1 = Liberal; 7 = Conservative) spectrum, $r = .47$, $p < .001$.

Social dominance orientation-D. We assessed the dominance subdimension of the SDO scale ($\alpha = .86$; Ho et al., 2012; see also Ho et al., in press). Responses were made on scales anchored at 1 (*strongly disagree*) and 6 (*strongly agree*).

Prejudice. We assessed prejudice against the Roma similarly to prior studies, using feeling thermometer ratings toward the Roma on a scale anchored at 0 (*cold, negative feelings*) and 10 (*warm, positive feelings*). Scores were reversed such that higher scores indicated greater outgroup prejudice.

Dehumanization. As in Studies 1 and 2, we assessed dehumanization using the Ascent scale. We assessed responses to a range of groups, including the Roma and ethnic Hungarians. Roma dehumanization was assessed by using ratings of Roma humanity on the Ascent measure, using a scale anchored at 0 (*least "evolved"*) and 10 (most "*evolved*"). As in earlier studies, the scores were reversed such that higher scores indicate dehumanization.

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[10] Confidence intervals here and throughout the manuscript refer to the unstandardized coefficient.

[11] The dataset included here is the same as that reported and used in Kteily et al. (2015, Study 4). However, that article examined the effects of blatant versus subtle dehumanization of the Roma among Hungarians, and did not consider the role of metadehumanization, as it was beyond the scope of that research.
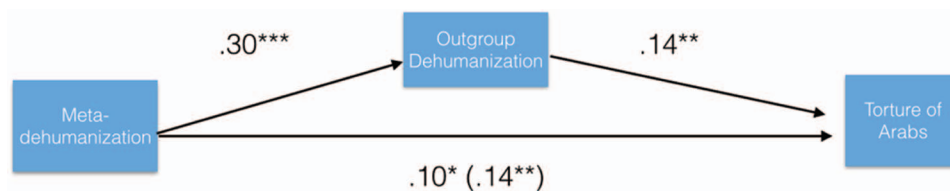
Figure 3. Path model showing effects of Americans' metadehumanization perceptions on support for torture of Arabs via outgroup dehumanization in Study 2, controlling for political ideology (not shown). Numbers reflect unstandardized β coefficients. * $p < .05$; ** $p < .01$; *** $p < .001$. See the online article for the color version of this figure.

Emotional hostility. We assessed hostile emotions toward the Roma by indexing each of the following emotions: anger, hatred, contempt, compassion (reverse-coded) and pity (reverse-coded); $\alpha = .83$. Responses were made on scales anchored at 1 (*not at all*) and 6 (*very much so*).

Funding to Roma integration. We assessed support for providing funding to Roma integration by asking participants to indicate the proportion of an EU fund they thought should be spent on "Roma integration and support" versus "Urban beautification" (0 = *none of the budget*; 100 = *all of the budget*).[12]

Support for discrimination. Support for discrimination was assessed using 14 items that indexed the extent to which individuals agreed with policies that discriminated against the Roma in domains spanning education, employment, and housing (e.g., "Decrease the number of Roma teachers"; "Cancel currently operating scholarships for Roma students"; see Supplementary Materials; $\alpha = .90$).[13] Responses were made on scales anchored at 1 (*completely disagree*) and 6 (*completely agree*), and recoded such that higher scores indicated more discriminatory attitudes.

Perceptions of Roma homogeneity. We assessed perceptions of Roma homogeneity by asking participants to indicate how similar they thought the Roma are to each other across several dimensions (e.g., "intellect," "values," "morality"; $\alpha = .91$; see Kteily et al., 2015). Responses were made on scales anchored at 1 (*very different from one another*) and 6 (*very similar to one another*).

Metadehumanization. Metadehumanization was assessed as in Study 1a ($\alpha = .94$), but with Roma as the target group. Scores were assessed on a 1–6 scale.

Responses to injustice. We assessed responses to injustices committed by the ingroup toward the Roma by asking participants to read a real newspaper story about Hungarian hooligans who threatened and shouted vulgarities at Roma children and urinated around their school campus. We asked participants how angry, guilty and ashamed they felt as Hungarians, and how compassionate they felt toward the Roma children in response to the story ($\alpha = .86$). Responses were made on scales anchored at 1 (*not at all*) and 6 (*very much so*).

Results

Descriptive statistics and variable intercorrelations are presented in Table 3.

As in Study 2, perceived metadehumanization by the Roma was positively associated with dehumanization of the Roma, $r = .35$, $p < .001$. Metadehumanization was also associated with prejudice toward the Roma, $r = .35$, $p < .001$.

As with Study 2, in Study 3 we examined our proposed model using PROCESS (see Figure 4 for an example outcome, "support for discrimination"). Specifically, we considered the extent to which metadehumanization was associated with hostile intergroup attitudes through dehumanization of the outgroup, controlling for political ideology (here, SDO and conservatism) throughout. We extended Study 2 by including prejudice (i.e., dislike) in the model. Metadehumanization was associated with greater outgroup dehumanization ($\beta = .19$, $b = .27$, $p < .001$, 95% CI [.19, .35]) and outgroup prejudice ($\beta = .22$, $b = .21$, $p < .001$, 95% CI [.15, .26]). Roma dehumanization was uniquely associated with each of the outcome measures (all $bs > .08$, $ps < .003$), with the exception of responses to injustice ($b = -.05$, $p = .10$). Similarly, Roma prejudice was uniquely associated with each of the outcome measures (all $bs > |.19|$, $ps < .001$), with the exception of perceived homogeneity ($b = .04$, $p = .37$).

We next examined the direct effects of metadehumanization on the outcome measures, and its indirect effects via each of dehumanization and prejudice (entered simultaneously as predictors; see Table 4). Consistent with the results of Study 2, metadehumanization had significant indirect effects, via dehumanization, on each of: reduced funding for Roma integration, support for discrimination against the Roma, perceptions of Roma homogeneity, and emotional hostility toward the Roma. Beyond these indirect effects via outgroup dehumanization, metadehumanization had significant indirect effects through the mediator of outgroup prejudice on funding to Roma integration, support for discrimination, less contrite responses to injustices committed toward the Roma, and emotional hostility toward the Roma. With the exception of responses to injustice and emotional hostility, metadehumanization had significant direct effects on each of the outcome measures after its relationships with outgroup dehumanization and outgroup prejudice were taken into account. Moreover, metadehumanization had significant total effects on all outcome measures.

In summary, among a large sample of ethnic Hungarians, the perception that the outgroup (i.e., Roma) dehumanizes the ingroup (i.e., majority Hungarians) was strongly associated with hostile outgroup perceptions and policy support. This was in part channeled through both dehumanization of and prejudice toward the "offending" outgroup, even after controlling for political ideology.

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[12] One participant entered a score of -100 on this item. This response was recoded as a missing value.

[13] We also included the Roma Attitudes Scale (Enyedi, Erős and Fábián, 2001). Because of its substantial overlap with the items about discriminatory policy, we did not include it as a separate outcome measure; we note that we observe the same results using this variable.

Table 2

Unstandardized Indirect, Direct, and Total Effects of Metadehumanization on Anti-Arab Attitudes and Policy Support Via Dehumanization of Arabs in Study 2, Controlling for Political Ideology

Effects	Surveillance of Arabs	Emotional hostility	Torture support	Drone support	Arab distancing	Opposition to Arab immigration
Indirect effect	.07 [.03, .13]	.10 [.06, .16]	.04 [.01, .09]	.04 [.01, .08]	.04 [.01, .09]	.03 [.01, .05]
Direct effect	.15 [.06, .25]	.18 [.11, .25]	.10 [.01, .19]	.09 [.002, .18]	.09 [.001, .18]	.02 [−.01, .05]
Total effect	.23 [.13, .33]	.27 [.20, .35]	.14 [.06, .23]	.13 [.05, .21]	.13 [.04, .21]	.05 [.02, .08]

Consistent with the previous studies, these findings suggest the importance of metadehumanization as a predictor of hostile and aggressive intergroup perceptions, attitudes, and policy support.

Study 4

In Study 4, we sought to examine the role of metadehumanization in a highly consequential social context involving very conflictual intergroup relations and a vicious ongoing cycle of intractable conflict (Bar-Tal, 2000): The Israeli-Palestinian conflict. Given the overt animosity frequently expressed and experienced in this context, we expected that metadehumanization would be highly associated with intergroup aggression. Another important goal of this study was to examine the uniqueness of metadehumanization as a metaperception: specifically, we considered whether the perception that the ingroup is *dehumanized* by an outgroup contributes to the perpetuation of intergroup hostility beyond the perception that the ingroup is *disliked* by an outgroup (i.e., metaprejudice).

Method

In May 2015, we collected data from 547 Israelis who responded to an online questionnaire about attitudes and perceptions toward Palestinians. We excluded 54 participants who answered an attention check question incorrectly, resulting in a final sample of 493 (M age = 40.96, SD = 13.07; 52.9% men; 97.4% Jewish; 0.8% Christian; 0.4% Other; and 1.4% No religion).[14] In addition to the variables of interest, the questionnaire included an experimental manipulation and associated measures for purposes unrelated to the current study.[15]

Measures. All variables were assessed on scales anchored at 1 (*strongly disagree*) and 7 (*strongly agree*), but were converted to a 0–100 scale for ease of comparison across studies. Variables were presented in fixed order.

Emotional hostility. We assessed hostile emotions toward Palestinians by indexing each of the following emotions: hatred, anger, hostility, empathy (reverse-coded), shame (reverse-coded), and guilt (reverse-coded; α = .76).

Support for negotiations. Support for negotiation was assessed using two items: "How willing would you be for Israel to enter direct negotiations with the Palestinians?," and "Israel should make a concerted effort to negotiate a resolution with the Palestinians," r = .89, p < .001.

Expulsion of Palestinians. We assessed support for the expulsion of Palestinians as a potential "solution" to the Israeli-Palestinian conflict. Specifically, we asked participants to indicate their agreement with the following item: "Absorbing the West

Bank and Gaza into Israel and forcing the Palestinians to go to Jordan."[16]

Support for aggressive Policies. We assessed support for aggressive policies toward the Palestinians, using seven items (e.g., "We should torture any Palestinian suspected of building tunnels in Gaza"; "Israel should use live fire to disperse Palestinian protests, even at the cost of hurting civilians and bystanders"; α = .84; see Supplementary Materials).

Metadehumanization. Metadehumanization was assessed using the same five items as in Study 3 (α = .92), here with respect to Palestinians.

Metaprejudice. Metaprejudice was assessed using the following two items: "Palestinians feel cold towards Israelis," and "Palestinians do not hold positive attitudes towards Israelis," r = .63, p < .001.

Dehumanization. Dehumanization was assessed using the Ascent scale of blatant dehumanization, assessed with respect to a number of groups, including Palestinians and Israelis. We assessed outgroup dehumanization as in previous studies, by reverse scoring ratings of Palestinians.

Results

Descriptive statistics and variable intercorrelations can be found in Table 5. We began by exploring the dimensionality of the items assessing metadehumanization and metaprejudice. Submitting these seven items to a principal component factor analysis with oblique rotation yielded two distinct factors. Consistent with our theorizing, the first factor (eigenvalue = 4.34, 62.04% variance explained) reflected metadehumanization (all factor pattern loadings > .74), and the second factor (eigenvalue = 1.17, 16.68% variance explained) reflected metaprejudice (factor pattern loadings > .85). There were no cross-loadings across factors (i.e., no

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[14] Results were consistent when the entire sample was used.

[15] The experimental manipulation involved reading one of several texts that either suggested that the U.S.' view of Israel was declining or continued to be positive. A MANOVA examining the effect of condition across the variables examined showed no significant effect of condition (Wilks' λ = .96, F (21, 1375.98) = 1.05, p = .40), though there was a small effect on support for aggressive policies, F (3, 485) = 2.70, p = .045, η_p^2 = .016. To account for any effects of experimental condition, we residualized all variables on condition. We further note that the patterns of interest were similar across experimental condition.

[16] We also assessed support for four other potential solutions. Although we focused on the most aggressive "solution" (i.e., Expulsion of Palestinians), we note that we observed very similar results on other hostile solutions (e.g., "Absorbing the West Bank and Gaza into Israel without giving Palestinians a right to vote"). Metadehumanization also predicted decreased support for a two-state solution to the conflict.

Table 3

Descriptive Statistics and Variable Intercorrelations in Study 3

Measures	1	2	3	4	5	6	7	8	9	10
1. Metadehumanization	—									
2. Dehumanization	.35***	—								
3. Prejudice	.35***	.57***	—							
4. Funding to Roma integration	−.31***	−.48***	−.49***	—						
5. Support for discrimination	.37***	.51***	.59***	−.63***	—					
6. Perceptions of Roma homogeneity	.22***	.23***	.18***	−.19***	.20***	—				
7. Responses to injustice	−.23***	−.32***	−.35***	.43***	−.56***	−.17***	—			
8. Emotional hostility	.34***	.56***	.64***	−.54***	.65***	.25***	−.44***	—		
9. SDO	.35***	.50***	.41***	−.37***	.48***	.19***	−.38***	.51***	—	
10. Conservatism	.17***	.23***	.27***	−.26***	.27***	.10**	−.32***	.22***	.31***	—
M	32.41	50.44	72.49	29.06	41.51	39.56	63.86	45.77	23.55	50.00
SD	27.82	37.83	25.75	25.30	21.69	26.76	30.22	24.55	21.86	25.13

Note. SDO = social dominance orientation.
** $p < .01$. *** $p < .001$.

variable had a factor pattern loading > .30 on the other factor). We created two composites, one for each of these constructs (metaprejudice: $M = 72.32$, $SD = 25.31$; metadehumanization: $M = 41.34$, $SD = 28.00$), which were intercorrelated, $r = .48$, $p < .001$.

We next examined the relationship between metadehumanization, metaprejudice, and dehumanization of Palestinians. Both metadehumanization, $r = .30$, $p < .001$ and metaprejudice, $r = .25$, $p < .001$ were associated with greater dehumanization of Palestinians. When we entered these two variables into a simultaneous regression predicting dehumanization, each explained unique variance (metadehumanization: $\beta = .23$, $b = .22$, $p < .001$, 95% CI [.12, .32]; metaprejudice: $\beta = .14$, $b = .16$, $p = .003$, 95% CI [.05, .26]).

We next examined the indirect effects of metadehumanization on the outcome variables via dehumanization of Palestinians, as well as its direct and total effects. As can be seen in Table 6, metadehumanization had a significant indirect effect on all outcome variables via outgroup dehumanization, controlling for metaprejudice (see Figure 5 for an example outcome, "support for

aggressive policies"). Metadehumanization further had significant direct and total effects on all variables, again suggesting its unique role in predicting hostile intergroup attitudes and policies. In parallel to metadehumanization, metaprejudice was also uniquely associated with several of the outcome variables (see Supplementary Table 1).

Study 4 extended our research in several important ways: First, it documented the importance of metadehumanization in another international context marked by hostile intergroup relations. Second, it showed this consistently across a range of highly meaningful and consequential outcome measures, including efforts for peaceful conflict resolution (i.e., support for negotiation) as well as highly belligerent actions, such as population transfer and support for collective aggression, likely to contribute to an ongoing cycle of conflict. Finally, and importantly, we established that perceiving that another group dehumanizes the ingroup is distinct from perceiving that they *dislike* the ingroup. Interestingly, this metaperceptual distinction between being (perceived to be) dehumanized and disliked parallels a similar distinction between dehumanizing and disliking, which have been shown to exert independent effects
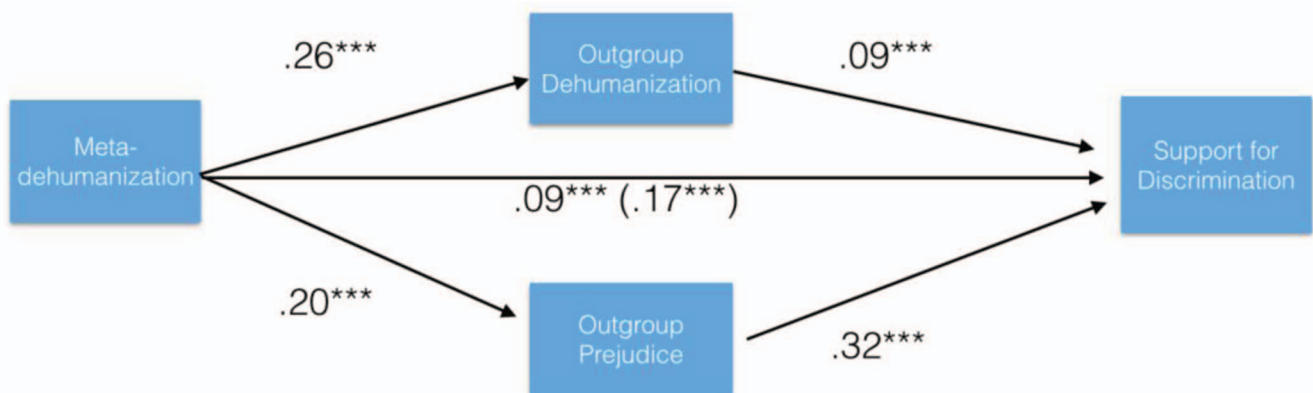

Figure 4. Path model showing effects of majority Hungarians' metadehumanization on support for aggressive policies towards the Roma in Study 3 via outgroup dehumanization and prejudice, controlling for political ideology (not shown). Numbers reflect unstandardized β coefficients. *** $p < .001$. See the online article for the color version of this figure.

Table 4
Unstandardized Indirect, Direct, and Total Effects of Metadehumanization on Anti-Roma Attitudes and Policy Support Via (A) Dehumanization and (B) Prejudice Towards Roma in Study 3, Controlling for Political Ideology

Effects	Funding to Roma integration	Support for discrimination	Perceptions of Roma homogeneity	Responses to injustice	Emotional hostility
Indirect effect (dehumanization)	−.04 [−.06, −.02]	.02 [.01, .04]	.02 [.01, .04]	−.01 [−.03, .00]	.03 [.02, .05]
Indirect effect (prejudice)	−.05 [−.08, −.03]	.06 [.04, .09]	.01 [−.01, .03]	−.04 [−.06, −.02]	.08 [.05, .11]
Indirect effect (total)	−.10 [−.13, −.07]	.09 [.06, .11]	.03 [.01, .05]	−.05 [−.08, −.03]	.11 [.08, .15]
Direct effect	−.08 [−.13, −.03]	.09 [.05, .13]	.13 [.06, .20]	−.05 [−.12, .02]	.04 [−.00, .09]
Total effect	−.17 [−.23, −.12]	.17 [.13, .22]	.16 [.09, .22]	−.10 [−.17, −.03]	.16 [.11, .21]

on intergroup outcomes (e.g., Andrighetto et al., 2014; Kteily et al., 2015).

In Studies 5a and 5b, we sought to further our research in two primary ways. First, we aimed to reexamine the unique effects of metadehumanization and metaprejudice while simultaneously examining both outgroup dehumanization *and* outgroup prejudice. This allowed us to test an important and heretofore unanswered question: whether there is a *dehumanization-specific* pathway—from metadehumanization through dehumanization to aggressive intergroup attitudes and policy support—that is independent of *both* metaprejudice and prejudice (as per Figure 1). Second, in addition to attitudes and policy support, we included behavioral criterion measures.

Study 5a focused on Americans' perceptions and metaperceptions with respect to ISIS members. This study was conducted shortly after the attacks in Paris, France in January 2015 in which Muslim extremists associated with ISIS killed 11 individuals at the satirical magazine Charlie Hebdo, after the publication of what were perceived as demeaning and highly offensive images of the prophet Mohammed. Study 5b examined Americans' perceptions and metaperceptions with respect to Iran in the summer of 2015, shortly after the Iran nuclear deal was announced and while its benefits and risks were being hotly debated.

Study 5a

Method

Participants. We collected data from 423 participants on Amazon's mTurk platform a few days after the Charlie Hebdo attacks in January 2015. We excluded one Arab participant and 56 nonnative born participants, leaving 366 participants (*M* age = 32.72, *SD* = 11.01; 57.9% women; 83.1% Whites, 4.9% Asian American, 4.4% Blacks; 4.6% Latino/Hispanic American; 1.9% Biracial; 0.8% Native American; and 0.3% Other).

Measures. We began by assessing metadehumanization and metaprejudice, which were presented in randomized order.

Metadehumanization. Metadehumanization was assessed (with respect to how ISIS perceive Westerners), using the same 6-item scale as in Study 2 (α = .88). We focused here on metaperceptions relating to Westerners given that the Charlie Hebdo attacks occurred in France (rather than the United States), and reflected a larger conflict between ISIS and Western nations (and values). We reasoned that in this context, Americans' membership in the broader category of "Westerner" would be most relevant with respect to their metaperceptions.

Metaprejudice. Metaprejudice was assessed (with respect to how ISIS perceive Westerners) using the 2-item scale in Study 4, *r* = .71, *p* < .001.

Next participants reported their dehumanization and prejudice toward ISIS.

Dehumanization. Dehumanization of ISIS was assessed as in previous studies (i.e., by taking the reverse score of the humanity attributed to ISIS on the 0–100 Ascent scale of blatant dehumanization).

Prejudice. Prejudice toward ISIS was assessed using reverse scored ratings of ISIS on the feeling thermometer, as in Study 3 (on a 0–100 scale). We next assessed a range of outgroup attitudes and behavior. Variables were presented in randomized order.[17]

Drone support. Support for drone strikes was assessed using the same 5-item scale as in Study 2, with slight modifications (e.g., "I support Western countries using drone attacks against suspected militant targets in Yemen"; α = .84).

Opposition to Muslim immigration. Opposition to Muslim immigration to the United States was assessed as in Study 2.

Militaristic counterterrorism. Support for militaristic counterterrorism was assessed using a 13-item scale adapted from Kteily et al. (2014, 2015; e.g., "To put an end to terrorist acts by ISIS, I think it is OK to use enhanced interrogation techniques"; "We should strike back with brutal force against any members of ISIS who seek to intimidate us"; α = .93; see Supplementary Materials). Responses were made on scales anchored at 1 (*strongly disagree*) and 7 (*strongly agree*), and then converted to a 0–100 scale.

Signing anti-ISIS petitions. We examined whether participants chose to sign in support or opposition of six different petitions, taken from Kteily et al. (2015, Study 5), about taking various measures to combat ISIS (e.g., "Increase the military budget allotted to combating the ISIS threat"; "Forcibly deport all Islamic clerics in the U.S. who preach in favor of ISIS"). Participants were told that the petition sponsors had agreed to use mTurk IDs as proxies for names because they are uniquely assigned to individuals. For each petition, participants could indicate whether they would like to add their mTurk ID in support (coded as +100), in opposition (coded as −100), or choose not to add their mTurk ID at all (coded as 0). Responses were coded such that higher scores reflected more hostility toward ISIS (α = .78).

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[17] Because of a programming error, the set of items including militaristic counter-terrorism and beyond were presented in the fixed order in which they appear in text.

Table 5
Descriptive Statistics and Variable Intercorrelations in Study 4

Measures	1	2	3	4	5	6	7
1. Metadehumanization	—						
2. Metaprejudice	.48***	—					
3. Dehumanization	.30***	.25***	—				
4. Support for negotiations	−.27***	−.19***	−.37***	—			
5. Expulsion of Palestinians	.25***	.19***	.27***	−.48***	—		
6. Support for aggressive policies	.30***	.23***	.48***	−.56***	.55***	—	
7. Emotional hostility	.27***	.36***	.40***	−.55***	.47***	.57***	—
M	41.34	72.32	55.31	58.91	36.46	41.09	65.71
SD	28.00	25.31	27.10	33.30	36.24	25.33	19.12

*** $p < .001$.

Anti-Islamic extremism fund disbursement. We assessed anti-Islamic extremism fund disbursement by asking participants to distribute funds between two programs aimed at decreasing extremism among Islamic communities in the United States: one centered on policing and surveillance of Muslims, and the other on providing them with education and opportunities for learning (see Kteily et al., 2015, Study 5). We used the percentage of funds allocated to policing and surveillance of Muslims as our measure of punitiveness.

Encouragement of U.S. troops fighting ISIS. We gave participants the opportunity to write messages in support of American troops combatting ISIS: we assigned a score of 100 to participants who chose to write a message, and a score of 0 to those who did not (Kteily et al., 2015, Study 5).

Supportive messages to families of Hebdo victims. Subsequent to being given the opportunity to write in support of U.S. troops, participants received the same prompt about whether or not they would like to write a message in "support of the families of the French journalists at Charlie Hebdo targeted in the past several hours." We assigned a score of 100 to participants who chose to write a message, and a score of 0 to those who did not.[18]

Punitiveness toward Hebdo attackers. After selecting whether or not they wanted to write a message to the families of the victims of the Charlie Hebdo attacks, we also asked participants to report their agreement with each of the following items assessing punitiveness toward the perpetrators (Kteily et al., 2014): "The perpetrators of the Charlie Hebdo attacks deserve to die a slow, painful death," "If found guilty of the attack, the perpetrators of the Charlie Hebdo attack should be subjected to the death penalty," and "I hope the perpetrators of the Charlie Hebdo attack rot in hell" ($\alpha = .80$). Responses were made on scales anchored at 1 (*strongly disagree*) and 7 (*strongly agree*), and transformed to a 0–100 scale, with higher scores indicate greater agreement for ease of comparison with previous studies.

Conservatism. We assessed conservatism with three items as in Study 2 ($\alpha = .89$).

Results

Descriptive statistics and variable intercorrelations can be found in Table 7. We submitted the eight items assessing metadehumanization and metaprejudice to a principal components analysis with oblique rotation. Consistent with Study 4, two factors emerged: the first factor (eigenvalue = 3.56, 50.84% variance explained) re-

flected metadehumanization (all factor pattern loadings >.69), and the second factor (eigenvalue = 1.33, 19.01% variance explained, all factor pattern loadings >.89) reflected metaprejudice. Using a factor loading of .30 as a cutoff, there were once more no cross-loadings across the two factors, which were correlated at $r = .38$, $p < .001$.

In our main analysis, we tested our full theoretical model (see Figure 1): we examined whether metadehumanization was uniquely associated with the outcome measures via dehumanization, controlling for both metaprejudice and outgroup prejudice (as well as conservatism). That is, we sought to identify, for the first time, a *dehumanization-specific* pathway from metaperceptions to outgroup attitudes and policy support.

The first part of our model (i.e., 'a' path in Figure 1) links metadehumanization to outgroup dehumanization. As expected, metadehumanization, $r = .26$, $p < .001$, but not metaprejudice, $r = .04$, $p = .47$, was significantly correlated with dehumanization of ISIS. We observed this same pattern when we entered these two variables into a simultaneous regression (controlling for conservatism): metadehumanization predicted dehumanization of ISIS ($\beta = .27$, $b = .47$, $p < .001$, 95% CI [.28, .66]), whereas metaprejudice did not ($\beta = −.06$, $b = −.13$, $p = .26$, 95% CI [−.36, .10]). Beyond its association with outgroup dehumanization, we also observed that metadehumanization was associated with anti-ISIS prejudice, $r = .33$, $p < .001$, as was metaprejudice, $r = .38$, $p < .001$. When simultaneously entered into a regression, both variables predicted unique variance in anti-ISIS prejudice (metadehumanization: $\beta = .22$, $b = .24$, $p < .001$, 95% CI [.13, .36]; metaprejudice: $\beta = .30$, $b = .42$, $p < .001$, 95% CI [.28, .56].

The second part of our model (i.e., 'b' path in Figure 1) posits that dehumanization will be uniquely associated with outcome measures, independent of outgroup prejudice (and all other predictors; i.e., metadehumanization, metaprejudice, and conservatism). With the exception of sending messages of support to American troops fighting ISIS ($b = .01$, $p = .07$, 95% CI [−.00, .02]) and messages of support to the families of the Hebdo attack victims ($b = .001$, $p = .73$, 95% CI [−.01, .01]), dehumanization of ISIS was itself uniquely associated with each of the outcome

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[18] Sixty-two participants indicated that they were unfamiliar with the Charlie Hebdo incident. These participants did not receive the item asking about sending a message to families of the victims, nor the subsequent items assessing punitiveness towards the Hebdo attackers.

Table 6

Unstandardized Indirect, Direct, and Total Effects of Metadehumanization on Anti-Palestinian Attitudes and Policy Support Via (A) Dehumanization in Study 4, Controlling for Metaprejudice

Effects	Support for negotiations	Expulsion of Palestinians	Support for aggressive policies	Emotional hostility
Indirect effect (dehumanization)	−.08 [−.13, −.05]	.06 [.03, .11]	.09 [.05, .13]	.05 [.03, .08]
Direct effect	−.19 [−.30, −.07]	.21 [.08, .33]	.14 [.06, .22]	.04 [−.03, .10]
Total effect	−.27 [−.39, −.15]	.27 [.14, .39]	.22 [.14, .31]	.09 [.02, .15]

variables (all bs $> .05$, all ps $< .045$). Beyond the role of dehumanization, prejudice toward ISIS itself was significantly associated with punitiveness toward the Hebdo attackers ($\beta = .19$, $b = .27$, $p = .001$, 95% CI [.11, .44], support for punishing and controlling (vs. educating) Muslims to prevent extremism ($\beta = .13$, $b = .18$, $p = .02$, 95% CI [.04, .33]), signing anti-ISIS petitions ($\beta = .12$, $b = .17$, $p = .04$, 95% CI [.01, .33]), militaristic counterterrorism ($\beta = .20$, $b = .21$, $p < .001$, 95% CI [.11, .30]), and drone strike support ($\beta = .21$, $b = .22$, $p < .001$, 95% CI [.11, .33]).

Finally, our model posits that metadehumanization will be associated with intergroup outcomes in part via its effects on outgroup dehumanization. As in prior studies we examined the indirect, direct, and total effects of metadehumanization on the outcome variables, controlling for ideology (here, conservatism; see Figure 6 for an example outcome, "signing anti-ISIS petitions"). We began by focusing on the pathway of particular interest: from metadehumanization to the outcome variables via dehumanization of ISIS. Consistent with predictions, this indirect pathway was significant for drone support, militaristic counterterrorism, opposition to immigration, signing anti-ISIS petitions, distributing funds to the control and punishment of Muslims (vs. educating them), and punitiveness toward the Hebdo attackers (but not for sending messages to U.S. troops fighting ISIS or families of the Hebdo victims; see Table 8). Metadehumanization also had significant indirect effects on six of the eight outcome measures via prejudice toward ISIS. In fact, metadehumanization was associated with intergroup attitudes and behavior in this study largely through its indirect effects: once these were accounted for, it had

significant direct effects only on signing anti-ISIS petitions and punitiveness toward the Hebdo attackers. Exploring the total effects, there was evidence of metadehumanization contributing uniquely to the explanation of militaristic counterterrorism, opposition to immigration, signing anti-ISIS petitions, and punitiveness toward the Hebdo attackers.

We observed less evidence, on the other hand, for unique effects of metaprejudice on the outcome measures (see Supplementary Table 2). There was some support for a prejudice-specific pathway from metaperceptions to outcomes: metaprejudice had significant indirect effects via prejudice on five of the outcome measures. On the other hand, it exhibited no indirect effects via dehumanization, and had no significant direct effects on any of the outcome variables. When total effects were examined, there was no evidence that metaprejudice provided additional utility in predicting the outcome variables in this context.

In summary, the results of Study 5a provide further evidence for the unique role of metadehumanization in intergroup conflict settings. Among a large community sample of Americans, and specifically focusing on metaperceptions regarding ISIS (the group widely thought to be associated with the Charlie Hebdo attacks), we observed that: (a) metadehumanization is distinct from metaprejudice; (b) metadehumanization is associated with intergroup outcomes via outgroup dehumanization, independent of prejudice and political ideology; and (c) metadehumanization is associated not only with intergroup attitudes, but also with behavior.

In Study 5b, we re-examined the role of metadehumanization and metaprejudice among Americans in a separate context and
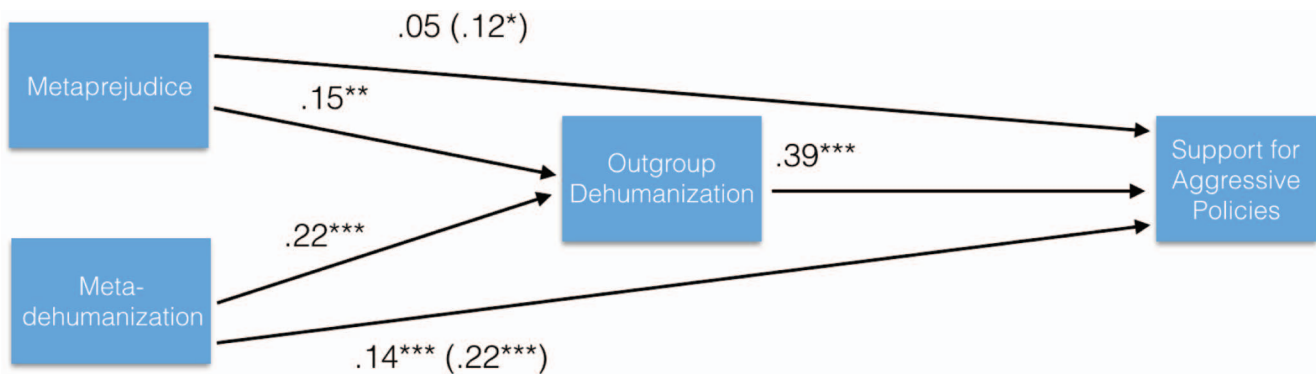

Figure 5. Path model showing effects of Israelis' metadehumanization on support for aggressive policies towards Palestinians via dehumanization of Palestinians in Study 4, controlling for metaprejudice. Numbers reflect unstandardized β coefficients. * $p < .05$; ** $p < .01$; *** $p < .001$. See the online article for the color version of this figure.

Table 7
Descriptive Statistics and Variable Intercorrelations in Study 5a

Measures	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Metadehumanization	—												
2. Metaprejudice	.38***	—											
3. Dehumanization	.26***	.04	—										
4. Prejudice	.33***	.38***	.33***	—									
5. Drone support	.10	.07	.27***	.25***	—								
6. Militaristic counter-terrorism	.24***	.15**	.39***	.31***	.69***	—							
7. Opposition to Muslim immigration	.11*	−.03	.31***	.14**	.40***	.39***	—						
8. Signing Anti-ISIS petitions	.22***	.09	.24***	.19***	.46***	.55***	.27***	—					
9. Anti-Islamic extremism fund disbursement	.11*	.03	.29***	.19***	.54***	.61***	.46***	.42***	—				
10. Encouragement of U.S. soldiers fighting ISIS	.11*	.08	.12*	.01	.23***	.23***	.11*	.24***	.24***	—			
11. Supportive messages to families of Hebdo victims	.07	.12*	.05	.14*	.01	.02	−.06	.14*	.04	.40***	—		
12. Punitiveness towards Hebdo attackers	.29***	.14*	.39***	.33***	.52***	.73***	.26***	.46***	.43***	.23***	.12	—	
13. Conservatism	.08	−.02	.18***	.01	.42***	.48***	.21***	.40***	.39***	.16**	−.01	.38***	—
M	70.52	90.53	38.17	85.87	45.75	49.98	85.05	5.92	32.95	19.73	25.33	61.90	43.45
SD	21.06	17.02	36.55	23.69	24.55	24.65	7.49	34.85	32.97	39.85	43.56	30.34	26.80

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

focusing on a different outgroup. Specifically, we assessed meta-perceptions relating to Iran shortly after the announcement of the hotly debated nuclear deal that President Obama announced in July 2015. We also expanded our measurement of metaprejudice (i.e., using a 5-item scale, as in Study 1b) and of blatant dehumanization (including, as in Study 1b, outgroup ratings a series of blatant animalistic traits in addition to Ascent scale ratings).

Study 5b

Participants

We collected data from 312 U.S. residents on Amazon's mTurk platform in July 2015. We excluded one Arab participant and one who did not report ethnicity, leaving 310 participants (*M* age = 31.80, *SD* = 9.86; 53.6% women; 79.7% Whites; 8.1% Hispanic American; 5.8% Blacks; 3.9% Asian American; 1.9% Native American; and 0.6% Other).

Measures

Conservatism. Conservatism was assessed using two items assessing self-placement on 1 (*very liberal*) to 7 (*very conservative*) scales assessing economic and social conservatism, respectively. Scores were transformed to a 0–100 scale, $r = .52$, $p < .001$. Next, participants responded to items about prejudice and dehumanization, in randomized order.
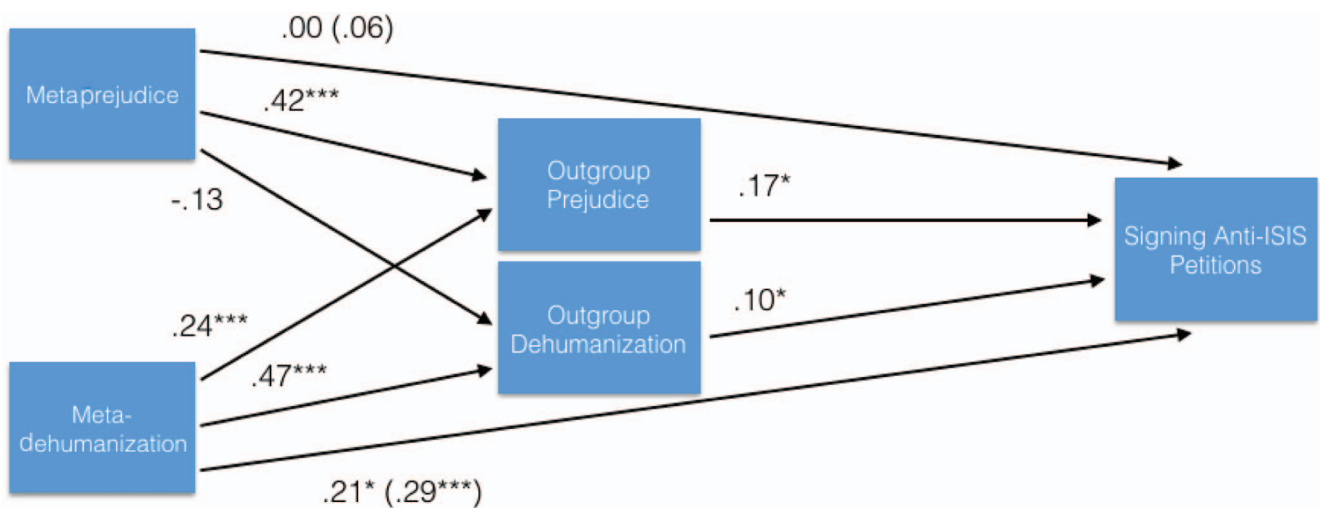

Figure 6. Path model showing effects of Americans' metadehumanization perceptions on signing anti-ISIS petitions via dehumanization of and prejudice towards ISIS in Study 5a, controlling for metaprejudice and political ideology (not shown). Numbers reflect unstandardized β coefficients. * $p < .05$; *** $p < .001$. See the online article for the color version of this figure.

Table 8
Unstandardized Indirect, Direct, and Total Effects of Metadehumanization on Anti-ISIS Attitudes and Behavior Via (A) Dehumanization and (B) Prejudice in Study 5a, Controlling for Metaprejudice and Political Ideology

Effects	Drone support	Militaristic counter-terrorism	Opposition to Muslim immigration	Signing Anti-ISIS petitions	Anti-Islamic extremism fund disbursement	Encouragement of U.S. soldiers fighting ISIS	Supportive Messages to families of Hebdo victims	Punitiveness towards Hebdo attackers
Indirect effect (dehumanization)	.04 [.01, .09]	.07 [.04, .13]	.02 [.01, .04]	.05 [.002, .12]	.08 [.03, .15]	.003 [.00, .01]	.001 [−.003, .004]	.10 [.05, .17]
Indirect effect (prejudice)	.05 [.02, .10]	.05 [.02, .09]	.01 [−.002, .04]	.04 [.01, .09]	.05 [.01, .09]	−.002 [−.006, .002]	.004 [.001, .01]	.05 [.05, .17]
Indirect effect (total)	.10 [.04, .16]	.12 [.07, .18]	.03 [.02, .05]	.09 [.04, .17]	.12 [.07, .21]	.002 [−.003, .007]	.004 [−.001, .01]	.14 [.08, .23]
Direct effect	−.05 [−.17, .08]	.08 [−.03, .19]	.02 [−.02, .06]	.21 [.03, .38]	.01 [−.15, .18]	.009 [−.006, .02]	−.001 [−.01, .01]	.20 [.04, .37]
Total effect	.05 [−.07, .17]	.20 [.09, .32]	.05 [.006, .08]	.29 [.13, .46]	.14 [−.03, .30]	.01 [−.004, .03]	.002 [−.01, .02]	.35 [.18, .51]

Prejudice. Prejudice toward Iranians was assessed using reverse scored ratings of Iranians on the feeling thermometer, as in previous studies (on a 0–100 scale).

Dehumanization. As in Study 1b, we computed a dehumanization composite by taking the average of (a) reverse-scored ratings of Iranians on the Ascent scale (as in previous studies reported here; $M = 22.53$, $SD = 25.48$) and (b) ratings of Iranians on a series of nine animalistic traits adapted from Bastian et al. (2013); for example, "savage, aggressive," "barbaric, cold-hearted," "capable of self control" (reverse-scored), and "rational and logical" (reverse-scored). Participants rated the extent to which these traits descried Iranians on a 1 (*not at all*) to 7 (*extremely so*) scale ($\alpha = .90$; $M = 4.01$, $SD = 1.20$).[19,20] Ascent dehumanization scores and animalistic trait ratings were highly correlated, $r = .57$, $p < .001$, and they were standardized and averaged to comprise a blatant dehumanization composite.

Metadehumanization. Metadehumanization was assessed (with respect to how Iranians perceive Americans) using the same 6-item scale as in Study 2, with the last item from that scale (referring to "vermin") replaced with "Iranians would happily step on Americans like cockroaches" ($\alpha = .95$).

Metaprejudice. Metaprejudice was assessed using the following items: "Iranians feels cold towards Americans," "Iranians do not have positive attitudes towards Americans," "Iranians don't like Americans much," "Iranians don't think of Americans in a friendly light," and "Americans are not Iranians' favorite people" ($\alpha = .97$). We next assessed a range of outgroup attitudes and behavior, presented in fixed order.

Opposition to the Iran nuclear deal. Individuals opposition to the Iran nuclear deal was assessed by asking participants to indicate their agreement or disagreement with six statements on a scale anchored at 1 (*strongly disagree*) and 7 (*strongly agree*): "I am embarrassed that the United States negotiated with the Iranians rather than enforcing our will militarily," "Iran is dedicated to the destruction of the U.S.," "The Iranians will use the money we give them to buy conventional weapons, and the moment they get a chance, they will build a nuclear weapon," "This treaty has the potential to heal old wounds between the U.S. and Iran, and bring our two countries closer together" (reverse-scored), "I am in favor of the U.S. nuclear deal with Iran" (reverse-coded), and "I think Iran is just as entitled to a nuclear program as any other nation." (reverse-scored; $\alpha = .87$).[21] We transformed scores to a 0–100 scale for ease of comparison.

Aggressive actions toward Iranians. Aggressive actions toward Iranians was assessed by asking participants to indicate their

[19] For exploratory purposes, we also assessed four traits associated with mechanistic dehumanization (e.g., "mechanical and cold, like robots"). Because Ascent dehumanization is more closely related to animalistic (*vs.* mechanistic) dehumanization (Kteily et al., 2015, Study 5), we excluded these items from our blatant dehumanization composite. Nevertheless, we obtained comparable results when these items were included.

[20] Participants also rated the ingroup (i.e., Americans) on these same animalistic traits ($\alpha = .85$; $M = 3.28$, $SD = .94$).

[21] We assessed two further items: "This nuclear deal is like giving your dog a treat after it pees on the rug," and "If you think you can tame a gorilla, it's only your fault if it returns to its true nature and bites." Because of the conceptual overlap with animalistic dehumanization, we removed these items from our composite. Results are consistent when these items are included.

agreement or disagreement with each of 12 actions toward Iranians (e.g., "I think it's acceptable to assassinate Iranian nuclear scientists," "Anyone caught in America spying on the U.S. for Iran should be sentenced to prison for life without parole"; see Supplemental Materials for full scale). Items were assessed on a scale anchored at 1 (*strongly disagree*) and 7 (*strongly agree*), and scores were transformed to a 0–100 scale (α = .94).

Signing antinuclear deal petitions. Using the same methodology as in Study 5a, we assessed whether participants chose to sign in support or opposition to five different petitions relating to the Iran nuclear deal (e.g., "Urge congressional members to examine military options against Iran"; α = .85; see Supplemental Materials for full scale). We also included items outside the scope of the current study (e.g., items on intergroup contact), which were not used and are not discussed further.

Results

Descriptive statistics and variable intercorrelations can be found in Table 9. We submitted the items assessing metadehumanization and metaprejudice to a principal components analysis with oblique rotation. Consistent with Studies 4 and 5a, two factors emerged: the first factor (eigenvalue = 7.86, 71.44% variance explained) reflected metadehumanization (all factor pattern loadings > .74), and the second factor (eigenvalue = 1.45, 13.15% variance explained, all factor pattern loadings > .86) reflected metaprejudice. Using a factor loading of .30 as a cutoff, there were once more no cross-loadings across the two factors. The metadehumanization and metaprejudice composites were correlated at r = .70.

We examined our full theoretical model as in Study 5a. Metadehumanization, r = .64, p < .001 and metaprejudice, r = .50, p < .001 were both significantly correlated with dehumanization of Iranians. Replicating the results of Study 5a, when we entered these two variables into a simultaneous regression (controlling for conservatism), metadehumanization was uniquely associated with dehumanization of Iranians (β = .55, b = .02, p < .001, 95% CI [.01, .02]), whereas metaprejudice was not (β = .09, b = .00, p = .15, 95% CI [−.00, .01]). Beyond outgroup dehumanization, metadehumanization, r = .48, p < .001 and metaprejudice, r = .46, p < .001 were each correlated with anti-Iran prejudice. Consistent with Study 5a, when simultaneously entered into a regression, both variables were uniquely associated with anti-Iran prejudice (metadehumanization: β = .28, b = .30, p < .001, 95% CI [.15, .45];

metaprejudice: β = .23, b = .25, p = .001, 95% CI [.10, .41]), controlling for conservatism.

Next, we examined the effects of dehumanization on the outcome measures. Consistent with our theoretical model, outgroup dehumanization predicted all of the outcome variables, controlling for all other predictors (i.e., metadehumanization, metaprejudice, outgroup prejudice, and conservatism): opposition to the Iran nuclear deal (β = .32, b = 8.42, p < .001, 95% CI [5.29, 11.54]), aggressive actions toward Iranians (β = .30, b = 7.52, p < .001, 95% CI [4.50, 10.53]), and signing petitions against the nuclear deal (β = .16, b = 7.19, p = .04, 95% CI [.25, 14.13]). In contrast to dehumanization, although prejudice toward Iran significantly predicted aggressive actions (β = .13, b = .09, p = .02, 95% CI [.01, .17]), it was not uniquely associated with opposition to the Iran nuclear deal (β = .00, b = .00, p = .96, 95% CI [−.08, .08]) or signing petitions against the nuclear deal (β = .00, b = .00, p = 1.00, 95% CI [−.18, .18]).

Finally, we examined whether the dehumanization-specific indirect pathway from metaperceptions to outgroup attitudes and behavior held as in Study 5a. We examined the indirect, direct, and total effects of metadehumanization on the outcome variables, controlling for ideology (here, conservatism; see Figure 7 for an example outcome, "aggressive actions toward Iran"). As with Study 5a, the indirect pathway from metadehumanization to outcomes via outgroup dehumanization was significant across outcome measures, including our behavioral measure of signing antinuclear deal petitions (see Table 10). In addition to its indirect effects via outgroup dehumanization, metadehumanization also had indirect effects on aggressive actions toward Iranians via outgroup prejudice (but not for the other outcome measures). Beyond these indirect effects, metadehumanization's direct and total effects were significant across the outcome measures.

Also consistent with Study 5a, metaprejudice exhibited less of a unique association with the outcome measures (see Supplementary Table 3). There was some support for a prejudice-specific pathway: there were significant indirect effects from metaprejudice on aggressive actions toward Iranians (though not for the other two outcome measures) through outgroup prejudice. On the other hand, metaprejudice had no indirect effects via dehumanization, and exhibited no significant direct or total effects on any of the outcome variables.

Table 9

Descriptive Statistics and Variable Intercorrelations in Study 5b

| Measures	1	2	3	4	5	6	7	8
1. Metadehumanization	—							
2. Metaprejudice	.70***	—						
3. Blatant dehumanization composite	.64***	.50***	—					
4. Prejudice	.48***	.46***	.67***	—				
5. Opposition to the Iran nuclear deal	.60***	.50***	.62***	.46***	—			
6. Aggressive actions towards Iranians	.60***	.49***	.63***	.54***	.73***	—		
7. Signing antinuclear deal petitions	.35***	.25***	.36***	.26***	.57***	.43***	—	
8. Conservatism	.26***	.24***	.28***	.27***	.50***	.43***	.38***	—
M	44.10	66.49	.00	47.12	45.19	29.46	−7.10	39.73
SD	28.03	26.98	.89	30.00	23.59	22.19	39.59	24.22

* p < .05. ** p < .01. *** p < .001.
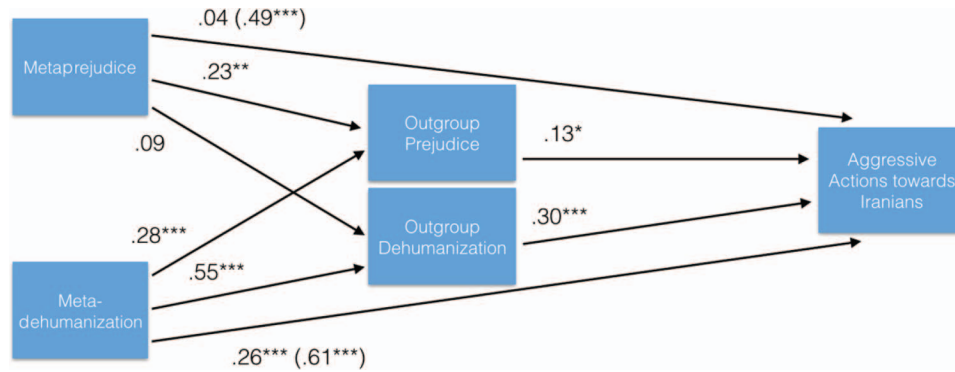
Figure 7. Path model showing effects of Americans' metadehumanization perceptions on aggressive actions towards Iranians via dehumanization of and prejudice towards Iranians in Study 5b, controlling for metaprejudice and political ideology (not shown). In contrast to the other figures, all numbers here reflect standardized (vs. unstandardized) beta coefficients; outgroup dehumanization here is a composite based on the average of two standardized measures (i.e., Ascent ratings and animalistic trait attributions). *** $p < .001$; * $p < .05$. See the online article for the color version of this figure.

In summary, the results of Study 5b replicate the results of Study 5a, and provide further evidence for the unique role of metadehumanization in intergroup conflict settings. Among a large community sample of Americans, and focusing on metaperceptions regarding Iranians during a period where the intergroup relationship between the two sides came under close scrutiny, we again observed that: (a) metadehumanization is distinct from metaprejudice, (b) metadehumanization is associated with intergroup outcomes via outgroup dehumanization, independent of prejudice and political ideology, and (c) metadehumanization is associated not only with intergroup attitudes, but also with behavior.

The set of studies described thus far have documented, for the first time, that perceiving that one's own group is blatantly dehumanized by an outgroup increases blatant dehumanization of that group in turn. These studies have also provided further empirical support for the notion that blatant outgroup dehumanization itself contributes to a range of aggressive outcomes that may foment cycles of intergroup conflict and violence. If perceiving that another group dehumanizes the ingroup increases outgroup dehumanization, thereby helping to ignite a process contributing to intergroup strife, might providing information that the outgroup *humanizes* the ingroup serve as an effective intervention to reduce outgroup dehumanization? We examined this question in Study 6.

Study 6

In Studies 1a and 1b, we established that priming Arab metadehumanization of Americans resulted in the reciprocal dehumanization of Arabs. In Study 6, we examined whether priming meta*humanization* could similarly humanize a typically dehumanized target group?

Method

Participants. We collected data from 220 participants through Amazon Mechanical Turk in October 2015.[22] Data from three Muslim participants, four participants nonnative to the United States and two participants who asked that their data be excluded from the study were removed from analysis, leaving 211 partici-

pants (M age $= 36.77$, $SD = 12.85$; 50.7% men; 80.1% Whites; 7.6% Asian American; 5.7% Blacks; 3.8% Hispanic American; 1.9% Biracial; and 0.9% Other).

Procedure. Participants followed the same general procedure as in Study 1b: in the experimental condition, participants read an article purportedly published in the Boston Globe describing the results of a report by the United Nations' Commission on Global Relations examining public perceptions of Americans in the Muslim world. The article was entitled "In large parts of Muslim world, American achievements greatly admired" (see Supplementary Materials for full text). The article was modeled closely after that used in Study 1b, but described Muslims' perceptions of Americans in humanizing (rather than dehumanizing) terms, such as "technologically advanced," "sophisticated," "culturally advanced," and as having "enlightened" principles. The article also quoted Muslims respondents extolling the American educational system, and United States efforts to avoid civilian casualties during wartime. As in Study 1b, the report noted that these perceptions of Americans were highly normative, held by a majority of Muslims.[23] We examined the effect of this metahumanizing prime on Muslim dehumanization and prejudice, presented in random order.

Outcome measures.

Dehumanization. As in previous studies, participants rated a number of groups, including Muslims and Americans, on the Ascent scale. We assessed participants' dehumanization of Muslims, as in Study 1b, using both the (reverse-scored) Ascent scale rating of Muslims ($M = 25.01$, $SD = 29.49$), and ratings of Muslims on the animalistic traits adapted from Bastian et al. (2013; $\alpha = .96$; $M = 3.69$, $SD = 1.35$). We again also examined blatant dehumanization as a composite by standardizing the two dehu-

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[22] Using TurkPrime's functionalities, we ensured that the samples in Studies 1b, 6, and 7 did not contain repeat participants.

[23] Results from the pretest reported in Study 1b indicated that this prime was successful in decreasing metadehumanization (assessed on a 1–7 scale) relative to control (experimental condition: $M = 2.04$, $SD = 1.27$; control condition: $M = 3.34$, $SD = 1.58$; $F (1, 132) = 28.08$, $p < .001$, $\eta_p^2 = .18$).

Table 10
Unstandardized Indirect, Direct, and Total Effects of Metadehumanization on Anti-Iranian Attitudes and Behavior Via (A) Dehumanization and (B) Prejudice in Study 5b, Controlling for Metaprejudice and Political Ideology

Effects	Opposition to Iranian nuclear deal	Aggressive actions towards Iranians	Signing antinuclear deal petitions
Indirect effect (dehumanization)	.15 [.09, .22]	.13 [.07, .21]	.13 [.01, .24]
Indirect effect (prejudice)	.00 [−.03, .03]	.03 [.002, .07]	.00 [−.05, .06]
Indirect effect (total)	.15 [.10, .21]	.16 [.10, .23]	.13 [.03, .22]
Direct effect	.23 [.13, .33]	.21 [.11, .31]	.29 [.07, .51]
Total effect	.38 [.28, .47]	.37 [.28, .46]	.42 [.22, .62]

manization scores (i.e., Ascent and the animalistic trait composite) and averaging them together, $r = .59$, $p < .001$.

Prejudice. We assessed prejudice toward Muslims as in Study 1b, using reverse-scored feeling thermometer ratings of Muslims ($M = 54.84$, $SD = 30.46$).

Results

In our primary analyses, we examined whether the experimental manipulation influenced participants' dehumanization of, and prejudice toward, Muslims. We began by examining the (standardized) blatant dehumanization composite. As predicted, Americans who read the article suggesting that Muslims humanized Americans were significantly *less* likely to dehumanize Muslims ($M = -.18$, $SD = .78$) than participants in the control condition ($M = .18$, $SD = .96$), $F(1, 208) = 7.11$, $p = .004$, $\eta_p^2 = .04$. We also examined each of the dehumanization scales separately. Ascent dehumanization was significantly lower in the metahumanization condition ($M = 19.89$, $SD = 24.34$) than it was in the control condition ($M = 30.09$, $SD = 33.17$; $F(1, 209) = 6.49$, $p = .01$, $\eta_p^2 = .03$).[24, 25, 26] Similarly, animalistic trait ratings of Muslims were also lower in the metahumanization condition ($M = 3.44$, $SD = 1.29$) relative to the control condition ($M = 3.93$, $SD = 1.36$; $F(1, 209) = 7.10$, $p = .008$, $\eta_p^2 = .03$).

In contrast to dehumanization, prejudice toward Muslims was similar in the metahumanization condition ($M = 42.37$, $SD = 28.77$) and the control condition ($M = 47.92$, $SD = 31.95$; $F(1, 209) = 1.76$, $p = .19$, $\eta_p^2 = .01$). Thus, these results demonstrated that individuals who learn that the outgroup perceives them in humanizing ways in turn humanize the outgroup. In this way, metahumanization may serve as an effective intervention in decreasing the tendency to dehumanize outgroups.

Studies 1–6 support the notion that (meta-)perceptions about the extent to which the ingroup is seen as human influence individuals' own attributions of outgroup humanity (with implications for intergroup outcomes), but do not directly provide empirical support for the mechanisms that we posit to underlie this association. In Study 7, we tested the proposed mediating role of identity threat and desires for reciprocity.

Study 7

In the introduction, we reasoned that perceiving that the ingroup is dehumanized by an outgroup would provoke social identity threat (Branscombe et al., 1999), generating a desire to reciprocate that hostility toward the offending outgroup (Bourhis et al., 1979;

Doosje & Haslam, 2005). Here, we examined whether individuals learned that they were dehumanized (vs. humanized) by an outgroup would be more likely to feel identity threat and a desire to reciprocate the outgroup's perception, which might account for individuals' own ratings of the outgroup's humanity.

Method

Participants. We collected data from 259 participants through Amazon Mechanical Turk in October 2015. Data from one Muslim participant, nine participants nonnative to the United States and one participant who asked for data exclusion were removed from analysis; an additional 16 subjects failed at least one of the attention check questions (see below), leaving 231 participants (M age $= 36.51$, $SD = 11.86$; 52.8% women; 82.3% Whites; 6.5% Blacks; 4.8% Hispanic American; 3.0% Asian American; 1.3% Native American; 1.3% Biracial; 0.4% Arab American; and 0.4% Other).

Procedure. Participants followed the same procedure as in Study 6, with the exception that participants were randomly assigned to receive either the metadehumanization prime (from Study 1b) or the metahumanization prime (from Study 6). After reading the primes, participants were asked to respond to items assessing their sense of threat and desire to reciprocate Muslims' perceptions of Americans, before being presented with items assessing dehumanization. We further used two attention checks at the end of the study, asking participants to report (a) whether the article they read suggested that Muslims had a positive, negative, or undetermined view of Americans, and (b) correctly recall the

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[24] Participants in the control condition happened to be marginally higher in political conservatism, $F(1, 209) = 3.21$, $p = .08$ (assessed before our manipulation). Including conservatism as a covariate did not affect the significance of any of our analyses.

[25] Two of the animalistic traits were mentioned in the metahumanization prime (i.e., "cultured" and "advanced"). Analyses excluding these two items from both the animalistic scale and the blatant dehumanization composite yielded equivalent results.

[26] An interesting find was that we also observed that reading that Arabs perceived Americans as highly human increased Americans' ratings of their own humanity ($M = 92.69$, $SD = 11.72$) on the Ascent scale relative to control ($M = 88.81$, $SD = 16.04$), $F(1, 209) = 4.23$, $p = .04$, $\eta_p^2 = .02$, suggesting that participants' own ingroup perceptions were in line with the outgroup's view. We return to the topic of ingroup humanization in the general discussion.

organization that authored the report detailed in the newspaper article.[27]

Measures.

Identity threat. We assessed participants' sense of threat to their American identity by asking them to answer the following items, all preceded by the stem, "When I think about the way that Muslims perceive Americans": "I find it offensive," "I find it illegitimate," "I find it threatening," "I think it is reasonable" (reverse-coded), and "I find it appropriate" (reverse-coded). Participants responded on a scale anchored at 1 (*not at all*) and 7 (*very much so*; $\alpha = .86$).

Reciprocity. We assessed participants' desire to reciprocate Muslims' perceptions of Americans by asking them to indicate their agreement with each of the following items (preceded by the same stem as above): "It makes me want to respond back negatively," and "It makes me want to respond back positively" (reverse-coded). Participants again responded on a scale anchored at 1 (*not at all*) and 7 (*very much so*; $r = .58$, $p < .001$).[28]

Dehumanization. As in Study 6, dehumanization of Muslims was assessed by Ascent dehumanization, animalistic trait ratings, and their composite, $r = .56$, $p < .001$.

Results

We first examined the effect of experimental condition on each of the proposed mediators. Participants in the metadehumanization condition reported higher levels of identity threat ($M = 4.22$, $SD = 1.39$) than those in the metahumanization condition ($M = 2.50$, $SD = .99$; $F(1, 229) = 115.46$, $p < .001$, $\eta_p^2 = .34$). Similarly, participants in the metadehumanization condition reported a higher desire to reciprocate hostility ($M = 3.84$, $SD = 1.66$) than those in the metahumanization condition ($M = 2.30$, $SD = 1.12$; $F(1, 229) = 67.54$, $p < .001$, $\eta_p^2 = .23$). Though conceptually distinct, these two mediators were themselves quite correlated, $r = .71$, $p < .001$.

We next examined the effect of experimental condition on outgroup dehumanization. We observed that those in the metadehumanization condition indicated higher levels of outgroup dehumanization on the composite dehumanization measure ($M = .21$, $SD = .96$) than those in the metahumanization condition ($M = -.23$, $SD = .73$; $F(1, 229) = 15.04$, $p < .001$, $\eta_p^2 = .06$). We observed similar results for the individual scales: participants in the metadehumanization condition indicated greater Ascent dehumanization ($M = 27.22$, $SD = 32.57$) than those in the metahumanization condition ($M = 15.27$, $SD = 21.71$; $F(1, 229) = 10.63$, $p = .001$, $\eta_p^2 = .04$), and participants in in the metadehumanization condition attributed more animalistic traits to Muslims ($M = 3.89$, $SD = 1.34$) than did those in the metahumanization condition ($M = 3.29$, $SD = 1.25$; $F(1, 229) = 12.52$, $p < .001$, $\eta_p^2 = .05$).[29]

Finally, we examined whether the effects of experimental condition were mediated by identity threat and reciprocity. Theorizing suggests that identity threat and desires to reciprocate are intimately related (Branscombe et al., 1999), supported by the high correlation we observed between these two constructs. Moreover, it follows from this theorizing that identity threat precedes desires to reciprocate a hostile perception. Thus, using the PROCESS Macro (Hayes, 2013; Model 6) we examined a serial mediation model, in which metadehumanization led to increased identity

threat, leading to a desire to reciprocate, and thus, outgroup dehumanization. This analysis revealed a significant indirect effect, .19, 95% CI [.07, .35], suggesting the plausibility of this model. When these mediators were taken into account, the main effect of experimental condition on outgroup dehumanization was no longer significant, $b = .02$, $p = .90$, 95% CI [−.24, .27].[30] Thus, individuals who received a metadehumanizing (vs. metahumanizing) prime were significantly more likely to feel threatened and to feel a desire to reciprocate that hostile perception, together accounting for their tendency to dehumanize the outgroup in kind.

In summary, the results of Study 7 provided empirical support for our theorizing about the reasons that metaperceptions about the humanity attributed to the ingroup by an outgroup and individuals' own attributions of humanity to that group are linked. Specifically, our results suggested that when individuals learn that their group is dehumanized (vs. humanized) by another group, they dehumanize that group in turn because they become more likely to feel that their social identity is threatened and thus show a greater desire to reciprocate that perception with hostility.

General Discussion

Ten studies document the importance of intergroup metadehumanization—that is, perceiving that one's group is dehumanized by another group. Whereas previous research has examined a range of negative metaperceptions (e.g., Barlow, Sibley, & Hornsey, 2012; Kamans et al., 2009; Owuamalam et al., 2013; Vorauer et al., 1998; Vorauer & Kumhyr, 2001), no prior research has examined individuals' perception that their group is perceived by another group as *less than fully human*. Combining past research suggesting that individuals feel a threat to their social identity (and a desire to reciprocate) when their ingroup is derogated (e.g., Branscombe et al., 1999; Doosje & Haslam, 2005), with research documenting the unique role of dehumanization in shaping intergroup hostility (e.g., Andrighetto et al., 2014; Haslam, 2006; Kteily et al., 2015), we theorized that metadehumanization would uniquely predict aggressive outgroup attitudes and behavior via reciprocated outgroup dehumanization. Using large samples across a range of cultural contexts and significant real-world conflicts (i.e., the Israeli-Palestinian conflict, the Charlie Hebdo attacks,

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[27] Results were consistent when these participants were included in the analyses.

[28] In a pilot correlational study ($n = 178$; separate from Study 5b) conducted before this experiment (focusing on metadehumanization with respect to Iran), we further examined the potential mediating role of perceiving a norm of conflict between the ingroup and outgroup (e.g., "It makes me think that hostility between us is just the norm"). We observed that whereas both identity threat and reciprocity significantly mediated the relationship between metadehumanization and dehumanization, perceived norm of conflict did not. Thus, we included only identity threat and reciprocity in this study.

[29] Analyses excluding traits mentioned in the primes yielded the same conclusions.

[30] Because serial mediation models involve more assumptions, we also examined a simultaneous mediation model in which identity threat and desires for reciprocity were modeled in parallel. Examining these variables simultaneously (PROCESS Macro, Model 4), we observed that desires for reciprocity significantly mediated the effect of experimental condition on outgroup dehumanization (indirect effect: .24, 95% CI [.08, .44]), whereas identity threat was a marginally significant mediator (indirect effect: .18, 95% CI [−.01, .40]; i.e., just including 0).

tensions between ethnic Hungarians and the Roma population, and the U.S.–Iranian nuclear deal), we found consistent support for our predictions.

Examining the intergroup relationship between Americans and each of Arabs (Study 1a) and Muslims (Studies 1b and 1c), we began by providing evidence suggesting that metadehumanization causes outgroup dehumanization rather than the reverse. In a series of studies, we next documented the unique role of metadehumanization in predicting aggressive intergroup outcomes via its effects on outgroup dehumanization: among Americans who perceive they are dehumanized by Arabs (Study 2), ISIS (Study 5a), and Iranians (5b), among ethnic Hungarians who perceive they are dehumanized by the Roma (Study 3), and among Israelis who perceive they are dehumanized by Palestinians (Study 4). This relationship could not be accounted for by 'mere' outgroup prejudice (Study 3) or metaprejudice (Study 4). Indeed, by controlling for both these constructs in Studies 5a and 5b, we were able to document a novel *dehumanization-specific* pathway from metaperception to action (including aggressive intergroup attitudes and behavior). We further showed (Study 6) that meta-*humanization* can decrease outgroup dehumanization just as metadehumanization increases it, and provided evidence (Study 7) for the roles of identity threat and reciprocity desires in linking metaperceptions about the humanity attributed to the ingroup by the outgroup on the one hand, and the humanity ratings ascribed to the outgroup on the other. Across studies, our effects could not be accounted for by political ideology (assessed via SDO, RWA, and conservatism in Study 2, and conservatism in Studies 3, 5a, and 5b).[31]

In summary, we obtained strong evidence that metadehumanization is a unique metaperception heretofore unexamined, and one that likely contributes importantly to the perpetuation of cycles of intergroup conflict and violence (Bar-Tal, 2000; Kelman, 1987). Indeed, one troubling implication of the dehumanization-specific pathway from metaperception to action identified here is that aggressive responses on the part of group members who feel dehumanized by another group could subsequently increase metadehumanization perceptions on the *other* side, increasing the probability of escalating conflict. For example, Americans who think that Arabs dehumanize them are willing to behave more aggressively toward Arabs, which could in turn drive perceptions among Arabs that Americans view them as "beasts," perpetuating a vicious cycle.

By examining dehumanization as a dynamic, interactive process involving both perceptions and metaperceptions, our work importantly extends dehumanization research, which has typically examined outgroup perceptions in isolation (see Bastian & Haslam, 2010, 2011 for exceptions in the interpersonal domain). By documenting a novel and consequential type of metaperception, we also extend the scope of previous work on the harmful effects of negative metaperceptions on intergroup interactions and encounters (e.g., Richeson & Shelton, 2007; Vorauer et al., 1998) to the realm of dehumanization and aggressive intergroup relations. Just as recent research highlights the need to return to a consideration of blatant intergroup attitudes (Forscher, Cox, Graetz, & Devine, 2015; Kteily et al., 2015), the present work suggests the importance of extending the examination of metaperceptions from concerns about being disliked or subtly rejected in cross-group interactions, to a specific consideration of expectations about being openly dehumanized. Given, for example, the tenor of race rela-

tions in the United States today—exemplified by claims among members of both the Black and policing communities that the other side openly diminishes their humanity—the time is ripe to give metadehumanization greater attention.

Our research also calls for greater efforts toward identifying interventions capable of attenuating the link between metadehumanization and outgroup dehumanization. One possibility is that asking individuals to engage in perspective-taking exercises (e.g., Hodson, Choma, & Costello, 2009) could reduce the potency of metadehumanization. If individuals were tasked with putting themselves in the shoes of an outgroup individual who was on the receiving end of a hostile action previously committed by the ingroup (e.g., a drone strike that killed several of their family members), they might come to understand that even "reasonable" people on the other side could, under certain circumstances, come to see one's group as savage. This understanding might help steer individuals who feel dehumanized by an outgroup away from reciprocal dehumanization and aggression, and toward more productive means of engaging with their counterpart.

Another potential approach could be to target identity threat. Study 7 suggested that people respond to metadehumanization with reciprocal outgroup dehumanization in part because metadehumanization causes them to feel that their ingroup identity is derogated. Given this, the use of group affirmation interventions may prove fruitful in reducing the link between identity threat and reciprocal dehumanization: If individuals faced with metadehumanization are able to affirm the ingroup's identity in other ways (e.g., by focusing on its high standing among third party groups), they may be buffered from devaluation resulting from the outgroup's perceptions (see Bendersky, 2014, for a related approach).

Beyond influencing the way in which individuals *respond* to metadehumanization, it would be interesting to examine the extent to which individuals' metadehumanization perceptions may be biased to begin with. Research suggests that individuals frequently overestimate the extent to which other groups' views differ from their own views (e.g., Keltner & Robinson, 1997); therefore, individuals may perceive that they are more dehumanized by the outgroup than is objectively true. In Study 6, we observed that providing Americans with information that Muslims perceive Americans in highly humanized terms reduced Americans' dehumanization of Muslims. Encouragingly, our intervention was based in part on actual perceptions that Muslims have of Americans (Esposito & Mogahed, 2007). If individuals' baseline metadehumanization perceptions are more pessimistic than is warranted by reality, providing them with disconfirming humanizing information may be one effective route toward improving intergroup relations.

Despite the advances made by the current work, there are also a number of open theoretical questions that would benefit from further examination. For example, we considered here intergroup contexts relatively high in conflict, where we hypothesized that blatant metadehumanization would be particularly relevant and potent; the extent to which our findings would generalize to less hostile intergroup relations remains unknown. In more peaceful contexts, there may be a greater inclination among group members

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[31] We note that we obtained the same (or stronger) results throughout when these control variables were not included.

to acknowledge and repair dehumanization they perceive from respected outgroups. Moreover, there may be contexts in which metadehumanization is altogether less relevant than in those considered here. We think it less likely that metadehumanization of this nature would be as prevalent or relevant when considering, for example, U.S.–German relations, despite any tensions that may exist between them. In such contexts, where tensions may exist in parallel with a mutual regard for the other side's humanity, we would expect metaprejudice to play a more prominent role. In examining the relative roles of metadehumanization and metaprejudice, future work could experimentally manipulate both constructs in one study. In Study 1a, we manipulated metadehumanization and held metaprejudice constant. It would be interesting to examine how individuals respond to different combinations of learning that they are (or are not) dehumanized and disliked. In particular, it would be interesting to examine whether learning that one's ingroup is humanized improves intergroup relations beyond learning that one's ingroup is liked.

Another aspect of our work worth investigating further is the extent to which our findings extend to more subtle forms of metadehumanization. In this work we manipulated and assessed blatant forms of metadehumanization (and outgroup dehumanization).[32] These measures were particularly appropriate and relevant given the tenor of intergroup relations in the contexts we examined. Nevertheless, contemporary dehumanization research has also highlighted the importance of more subtle forms of dehumanization in "everyday" contexts, such as denying outgroups complex secondary emotions, or traits central to human nature (e.g., Haslam, 2006, 2014; Leyens et al., 2000, 2007). If the outgroup does not explicitly perceive the ingroup as less evolved, but rather subtly conveys a sense that it is less relevant (e.g., Bastian & Haslam, 2010) or that it has fewer complex emotions (Leyens et al., 2000), it is possible that individuals will respond primarily by feeling disheartened or saddened, rather than aggressive (see Bastian & Haslam, 2010, 2011).

It will also be important for future work to consider how the effects of metadehumanization might operate across the power spectrum. As with much research on intergroup metaperceptions, we focused on relatively high power groups (i.e., Americans, Israelis, and ethnic Hungarians) and how they feel they are perceived by their lower-power/status counterparts. It remains to be seen how relatively low power groups (e.g., Arabs, Roma, and Blacks) respond to the perception that they are seen as less than human by the high power outgroup. There are a number of reasons to suspect that the processes we identified might operate similarly—and perhaps even more powerfully—among low power groups. For one, as with high power groups, disadvantaged groups should experience derogation of the ingroup as aversive and seek to rectify it (Branscombe et al., 1999), particularly with respect to metadehumanization, which has deep implications for the very worth of the group. Moreover, previous work among low power or disadvantaged groups has shown that they too can reciprocate negative metaperceptions by expressing negativity toward, or endorsing collective action against, the outgroup (Branscombe, Schmitt, & Harvey, 1999b; Kamans et al., 2009; Owuamalam et al., 2013). This is likely to be especially true in highly conflictual contexts, where low power group members (e.g., Palestinians) may be uninclined to take on board the other side's (e.g., Israel) hostile perceptions of them. The idea that low power groups may be

highly reactive to metadehumanization is also in line with research on divergent goals in interracial interactions. This research suggests that disadvantaged groups care more than advantaged groups about being respected and perceived as competent, whereas advantaged groups care more about being seen as moral (Bergsieker, Shelton, & Richeson, 2010; see also Shnabel, Nadler, Ullrich, Dovidio, & Carmi, 2009). It is highly plausible that metadehumanization maps particularly well on to the perception that the ingroup is disrespected, which suggest that it may be especially impactful among low power groups.

On the other hand, there are also some reasons to predict that the link between metadehumanization and outgroup dehumanization might be attenuated among disadvantaged groups. For example, it is possible that those low power group members higher on the motivation to justify the system (Jost, Banaji, & Nosek, 2004) may internalize even blatantly hostile perceptions that the outgroup holds of them. It is also possible that metadehumanization might come to be accepted by members of low power groups who lack collective efficacy (see Van Zomeren, Postmes, & Spears, 2008). The possibility that low power groups will be less likely than high power groups to respond to metadehumanization with outgroup dehumanization is bolstered by research showing that some disadvantaged groups (e.g., the Roma, or recent immigrants to Europe) do not (subtly) dehumanize the outgroup, despite clear evidence of their marginalization and maltreatment (Miranda, Gourveia-Pereira, & Vaes, 2014; see also Capozza, Andrighetto, Di Bernardo, & Falvo, 2012; Iatridis, 2013). Future work should examine both the link between metadehumanization and outgroup dehumanization as a function of group power, as well as likely moderators such as perceptions of system illegitimacy and group efficacy.

Future work would also benefit from further exploration of the nature of the causal relationship between metadehumanization and outgroup dehumanization. In the present work, we provided causal evidence that metadehumanization increases dehumanization (Studies 1a–1b; see also Studies 6–7), but did not find evidence for the reverse causal pathway (Study 1c). Nevertheless, despite the results we obtained in Study 1c, it would be premature to definitively rule out the possibility that outgroup dehumanization may also cause metadehumanization. For example, it is possible that individuals who dehumanize an outgroup may come to interpret that outgroup's actions in ways that confirm the idea that they dehumanize the ingroup, perhaps to legitimize premeditated aggression (see Castano & Giner-Sorolla, 2006, for similar reasoning). Alternatively, individuals who dehumanize another group

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[32] We note that our use of the term "blatant" refers to the *type* (and not *extent*) of dehumanization perceptions (see also Kteily et al., 2015). Across our correlational samples, dehumanization levels on the (reverse-scored) Ascent scale ranged from a score of 18 (Study 2; Americans rating Arabs) to 50 (Study 3; Hungarians rating Roma). Although this certainly implies differences in the extent of outgroup dehumanization across these contexts, we consider both to reflect blatant dehumanization, because in each case participants consciously and explicitly lessen the full humanity of the outgroup on a metric that unambiguously captures animalistic associations. We note further that in all studies reported here, individuals rate the outgroup as significantly lower in humanity than the ingroup. For a broader theoretical and empirical discussion of the differences between blatant dehumanization and subtler, potentially unconscious, forms (such as the denial of secondary emotions), see Kteily et al., 2015.

may simply infer that that group similarly dehumanizes their own through a perceived norm of reciprocal hostility (perhaps especially when two groups are already embroiled in violent conflict with one another). Longitudinal designs that examine the developmental course of metadehumanization and dehumanization—perhaps across an episode of intense intergroup conflict—would be well suited to continued examination of this question.[33]

Beyond further examining the causal relationship between metadehumanization and outgroup dehumanization, it will be useful for future research to consider the conditions under which metadehumanization versus outgroup dehumanization may play a relatively more important role in predicting intergroup aggression. For example, we observed that the correlation between dehumanization and intergroup attitudes tended to be somewhat stronger for ethnic Hungarians (with respect to Roma; Study 3) and Israelis (with respect to Palestinians; Study 4) than the correlations between metadehumanization and outcomes. In our American samples, on the other hand, these associations were generally closer in magnitude (with respect to Arabs and Iranians in particular; Studies 2 and 5b).[34] Although purely speculative, it is possible that this may have something to do with Americans' status as a global hegemon. Perhaps feeling dehumanized is particularly shocking to members of group possessing very high power, directly provoking especially strong intergroup responses. Another difference between these samples that may account for this pattern is the fact that the Roma and Palestinians belong to the same social system as Hungarians and Israelis, respectively, whereas the group examined among Americans represent distant outgroups. Feeling dehumanized by a relatively unknown quantity may be particularly threatening, calling for especially aggressive responses.

Finally, it will be important for future work to consider the role that ingroup humanization may play in responses to metadehumanization. Vaes, Leyens, Paladino, and Miranda (2012) suggest that outgroup dehumanization and ingroup humanization may be independent (paralleling the distinction between ingroup love and outgroup hate; Brewer, 1999), and may arise for different reasons. For example, these authors argue that whereas ingroup humanization may be fairly common and is rooted in variables such as ingroup identification (see Demoulin et al., 2009), outgroup dehumanization may depend on contextual features such as the present of threat, and is more closely associated with variables such as ingroup glorification (see Leidner et al., 2010).

Given the conflictual contexts we examined, and because we were examining how "we see them" based on how "they see us," we focused here on outgroup dehumanization rather than ingroup humanization. Because ingroup and outgroup humanity attributions may be correlated, however, it is theoretically possible that our results might have been driven more by ingroup humanization in response to metadehumanization than by outgroup dehumanization per se. In supplemental analyses, we controlled for ingroup humanity attributions to test this possibility and obtained the same pattern of results throughout (see Supplementary Materials). This suggests that our observed relationship between metadehumanization and reciprocal outgroup dehumanization is distinct from ingroup humanization.

On the other hand, when we examined the relationship between metadehumanization and ingroup humanity attributions controlling for outgroup ratings, we found inconsistent results: in most samples, metadehumanization was unassociated with ingroup hu-

manization. In two cases (among Israelis and Hungarians), metadehumanization was surprisingly (but weakly) associated with lower ingroup humanity ratings, suggesting that participants' own perceptions may have been somewhat influenced by the outgroup's view (see also Bastian & Haslam, 2011). Consistent with this notion, in Studies 6 and 7, we observed that Americans who learned that they were humanized by Muslims were also more likely to humanize the ingroup (as well as humanizing the outgroup). Nevertheless, it is important to note that association between metadehumanization and dehumanization was consistent throughout when we assessed dehumanization in relative terms (i.e., as a difference score between ingroup and outgroup ratings). This suggests that even where metadehumanization might have been associated with less ingroup humanization, this was outweighed by its association with greater outgroup dehumanization. Future work should examine how individuals respond to metadehumanization in terms of their perception of the ingroup more directly.[35]

Conclusion

Our work provides clear evidence that metadehumanization is a novel and important metaperception that can contribute to the perpetuation of highly consequential forms of intergroup conflict and hostility. Particularly given the recent spread of movements such as ISIS, the persistence of the Israeli/Palestinian conflict, and ongoing racial and ethnic hostilities in societies around the world, determining how to blunt metadehumanization, or its effects on reciprocal dehumanization, may be critical to reducing vicious cycles of intergroup conflict.

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[33] We note that the cross-sectional models we examine in Studies 2–5b assume, in line with our experimental findings, that metadehumanization causes outgroup dehumanization. Although the causal model we propose is derived from our experimental findings and supported in our correlational data, this does not definitively rule out the plausibility of the reverse causal order (i.e., with dehumanization causing metadehumanization).

[34] We thank an anonymous reviewer for highlighting this pattern of results.

[35] We note that the Ascent scale may not be ideal for assessing ingroup humanization, because a sizeable proportion of participants rate the ingroup at ceiling on the scale. Thus, an individual who feels dehumanized by the outgroup and who may otherwise have sought to humanize the group beyond the scale maximum will not be able to register that response. In Study 5b, we examined animalistic trait attributions to the outgroup and ingroup in addition to the Ascent scale. For these traits, a smaller proportion of participants responded at floor when rating the ingroup, providing more "room to move." Thus, the use of these trait attributions may be more appropriate for those interested in directly examining ingroup humanization. Using these trait attributions in Study 5b, we found that metadehumanization was associated with outgroup dehumanization but not ingroup humanization.

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