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The Uniquely Powerful Impact of Explicit, Blatant Dehumanization on Support for Intergroup Violence

Alexander P. Landry[1], Isaias Ghezae[2], Ramzi Abou-Ismail[3], Sarah Spooner[4], River J. August[5], Charlotte Mair[6], Anya Ragnhildstveit[7], Wim Van den Noortgate[8], Michele J. Gelfand[1], and Paul Seli[9]

[1] Department of Organizational Behavior, Stanford University
[2] Department of Psychology, Harvard University
[3] Department of Political and International Studies, Institute for Social Justice and Conflict Resolution, Lebanese American University
[4] Pneuma Science, Draper, Utah, United States
[5] Department of Family and Consumer Studies, University of Utah
[6] Department of Psychology, Institute of Psychiatry, Psychology and Neuroscience, King's College London
[7] Department of Psychiatry, University of Cambridge
[8] Department of Psychology, Katholieke Universiteit Leuven
[9] Department of Psychology and Neuroscience, Duke University

To effectively address support for intergroup violence, we must understand the psychology promoting it. *Dehumanization*—the explicit and blatant denial of an outgroup's humanity—is widely considered one such promoter, which has informed extensive research and practice on support for intergroup violence. Nonetheless, dehumanization is often intertwined with intense *dislike*, raising concerns that dehumanization's explanatory power is much more restricted than widely assumed. In the extreme, "dehumanization" is merely another way to express dislike. If so, then theories of dehumanization distort our understanding of the psychology promoting support for intergroup violence. Here, we test dehumanization's reality and explanatory power through three studies that span diverse methods and samples. First, we meta-analyze existing studies on dehumanization and dislike to establish their independent effects on support for violence ($k = 120$; $N = 128{,}022$). We then test the generalizability of these effects across four violent conflicts in the United States, Russia and Ukraine, Israel and the Palestinian diaspora, and India ($N_{\text{Total}} = 3{,}773$). In these studies, we also test whether individuals' dehumanizing responses are merely metaphor or whether they are intended literally. Finally, we experimentally isolate dehumanization's role in support for violence in another U.S. sample ($N = 753$). Our results converge to demonstrate that dehumanization (a) is distinct from dislike and often literal, (b) has a unique—and particularly strong—relationship with support for violence, and (c) can promote such support. This clarifies our understanding of the psychology promoting support for intergroup violence and can inform efforts to address it.

Keywords: dehumanization, dislike, violence, meta-analysis, intergroup relations

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Alexander P. Landry https://orcid.org/0000-0003-1579-7326

Sarah Spooner, River J. August, and Charlotte Mair contributed equally to this article.

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Correspondence concerning this article should be addressed to Alexander P. Landry, Department of Organizational Behavior, Stanford University, 655 Knight Way, Stanford, CA 94305, United States. Email: alandry@stanford.edu

> The Holocaust did not start with the gas chambers and the Rwandan genocide did not start with the slayings. It started with the dehumanization of a specific group of persons.
>
> —Adama Dieng, Special Adviser on the Prevention of Genocide (United Nations, 2014)

To effectively address support for intergroup violence, we must understand the psychology promoting it (Rai et al., 2017). In many instances of intergroup violence, perpetrators explicitly deny their victims' humanity (e.g., Hagan & Rymond-Richmond, 2008; Hatzfeld, 2005; Smith, 2021b). This has inspired a generative hypothesis in the social sciences: that the explicit and blatant denial of another's humanity, or *dehumanization*, can promote intergroup violence (Bandura et al., 1975; Kelman, 1973). Five decades of theory and research support this notion—implicating dehumanization in massacres, warfare, and genocide (Kelman, 1973; Kteily & Bruneau, 2017; Smith, 2021b). News media, politicians, human rights organizations, and the general public have taken notice, with references to dehumanization suffusing public discourse on, and informing policies to address, mass atrocities (see epigraph; Amnesty International, 2017; Beyond Conflict, 2019; Stanton, 2023; United Nations, 2023c).

Despite its wide appeal, the dehumanization hypothesis faces a serious challenge. Namely, when people explicitly deny the humanity of a group, they often also feel intensely negative toward this group. This has inspired compelling arguments that dehumanization's explanatory power is much more restricted than widely assumed, and in the extreme, that so-called "dehumanization" is instead an expression of intense *dislike* toward despised outgroups (who are perceived as fully human; Bloom, 2017; Over, 2021; Rai et al., 2017). If so, theories of dehumanization distort our understanding of the psychology promoting intergroup violence (Lang, 2020). Others have responded that dehumanization goes beyond dislike to render its target particularly vulnerable to extreme harm (Fincher et al., 2018; Kteily & Landry, 2022). Still, no consensus has been reached regarding dehumanization's role in intergroup violence.

Given the influence of the dehumanization hypothesis on efforts to address intergroup violence, resolving this issue is crucial. Therefore, we test whether dehumanization is reducible to dislike or if it has a uniquely powerful impact on support for violence. In what follows, we review the theoretical and empirical basis of the dehumanization hypothesis before considering recent debates about its validity. We then describe our attempt to empirically resolve this debate across multiple methods, samples, and contexts. We conclude by considering the implications of our results for the psychology of intergroup violence.

Foundations of the Dehumanization Hypothesis

Seeking to understand extreme intergroup violence, psychologists, political scientists, sociologists, historians, philosophers, and communications scholars have all noted the prominence of dehumanization. Ethnic massacres, war crimes, and genocide are often tied to political ideologies, leaders, and propaganda that categorize the victims as subhuman (Musolff, 2007; Savage, 2007; Smith, 2021b; Steuter & Wills, 2009; Tirrell, 2012). Moreover, those who directly perpetrate the violence often assert their victims are subhuman (Goldhagen, 2009; Hatzfeld, 2005; Sereny, 1974), a fact corroborated by the victims themselves (Hagan & Rymond-Richmond, 2008; Levi, 1986; Müller, 1979).

These observations inspired social–psychological theories that dehumanization can facilitate extreme violence. Seminal accounts argued that dehumanization helps perpetrators overcome inhibitions against violence by depriving their victims of a unique identity and connection with the perpetrator (Kelman, 1973), placing them outside of ethical consideration (Bandura et al., 1975; Opotow, 1990), and denying them the positive moral qualities thought to distinguish humankind (Schwartz & Struch, 1989). These foundations inspired a groundswell of research investigating individuals' explicit and blatant denial of a target's humanity.[1] Some work has investigated the attribution of animalistic traits to the target (e.g., "lacking self-restraint, like an animal"; Bastian et al., 2013),[2] associating them with animal- versus human-related words (Viki et al., 2012), and asking to what degree the target is like vermin, cockroaches, or "no better than animals" (Bandura et al., 1996; Jackson & Gaertner, 2010; Rousseau et al., 2023). However, the most prominent measure of explicit, blatant dehumanization was developed by Kteily et al. (2015). This instrument presents participants with the popular "Ascent of Man" image depicting the folk notion of human evolutionary progress, with five silhouettes progressing from a quadrupedal human ancestor to a fully upright human (Supplemental Figure S1). Using this image as a guide, participants rate how "evolved" the target is. This scale is a well-validated measure of dehumanization that has now been administered to thousands of participants across dozens of countries (reviewed by Kteily & Landry, 2022).

Collectively, two key insights emerge from empirical research on dehumanization. First, in many contexts, participants explicitly and blatantly deny outgroups' full humanity (Kteily & Bruneau, 2017). Second, such dehumanization is consistently linked to support for violence—including capital punishment (Viki et al., 2012), political violence (Landry, Druckman, & Willer, 2024; Zlobina & Andujar, 2021), military aggression (Bruneau & Kteily, 2017; Jackson & Gaertner, 2010; Kteily et al., 2015, 2016), and war crimes (Landry, Fincher, et al., 2024; Lindén et al., 2016; Rousseau et al., 2023; Slovic et al., 2020; Viki et al., 2013). Thus, a wealth of evidence suggests that dehumanization plays a key role in violence.

Challenging the Dehumanization Hypothesis

Despite the prominence of the dehumanization hypothesis, an increasing number of scholars have questioned its theoretical and empirical basis. Theoretically, they take issue with the notion that

[1] Three terms in this sentence need clarification: "target," "explicit," and "blatant." *Target* refers to an individual person or (more commonly) a group of people. Dehumanization is *explicit* when the dehumanizer is consciously aware they are evaluating a target and *blatant* if a lay observer would readily recognize that the dehumanizer perceives the target as less than fully human (see Kteily & Landry, 2022, p. 227). There are also implicit and subtler forms of dehumanization, which are considered in the subsection "Scope of the Present Research."

[2] Along with animalistic dehumanization, the measure by Bastian et al. (2013) also assesses the attribution of mechanistic traits such as "mechanical and cold, like a robot" (see Haslam, 2006, for the distinction between animalistic and mechanistic dehumanization). Still, most empirical research into explicit, blatant dehumanization focuses on the animalistic form (see Supplemental Table S1 for the dehumanization measures included in our meta-analysis).

dehumanization helps perpetrators overcome moral restraints against harming others (e.g., Bandura et al., 1975; Kelman, 1973). These critiques note that much violence occurs, not by overcoming moral restraints but by strengthening moral motivations (Fiske & Rai, 2014). In such "morally motivated" violence, perpetrators believe their victims deserve to be harmed and want these victims to understand and experience their suffering, requiring them to be human (Rai et al., 2017). Morally motivated perpetrators may call their victims animals or vermin, but they do so to degrade and humiliate—thus implicitly recognizing their victims' humanity (Bloom, 2017; Lang, 2020; Manne, 2016; Over, 2021). And perpetrators also often characterize their victims in distinctively human—yet extremely negative—ways, such as criminals and traitors (Over, 2021).

These critiques argue that dehumanization's explanatory power is much more restricted than widely assumed. At their extreme, they suggest so-called "dehumanization" is instead an expression of intense *dislike*. That is, dehumanization is a mere metaphor—a particularly effective rhetorical device to express negative sentiments or attribute undesirable traits to despised outgroups (Bloom, 2017; Lang, 2020; Manne, 2016; Over, 2021). Indeed, when an outgroup is described using animalistic slurs, they are seen as possessing traits that are considered undesirable but nonetheless human (e.g., corruption and arrogance; Enock & Over, 2023). Thus, theories of dehumanization may distort our understanding of the psychology promoting violence (Lang, 2020; Over, 2021; Rai et al., 2017).

This challenges the validity of empirical research implicating dehumanization in support for violence. For instance, when participants place a target toward the quadrupedal human ancestor on the "Ascent of Man" scale, they may simply be expressing dislike toward them. Thus, any relationship between measures of (putative) dehumanization and support for violence may actually be driven by dislike. In sum, the theoretical and empirical basis of the dehumanization hypothesis is in flux.

Defending the Dehumanization Hypothesis

Other scholars argue that, although often intertwined, dehumanization and dislike are conceptually separable. For instance, some European colonizers may have felt warmly toward indigenous peoples yet still considered them to lack a "rational soul" deemed essential to full humanity (Jahoda, 1999; Madley, 2016; Smith, 2011). And even in extreme cases of genocide (where perpetrators presumably felt intensely negative toward their victims), many perpetrators appeared to genuinely believe their victims are subhuman (Smith, 2021b, Ch. 2).

Empirical evidence supports a dissociation between dehumanization and dislike. For instance, in much of the work using the "Ascent of Man" scale, researchers also measure participants' general negative affect toward the target. These measures only moderately correlate, and dehumanization predicts many consequential outcomes after accounting for negative affect (reviewed by Kteily & Landry, 2022, p. 235). Further evidence for dissociation comes from cross-cultural research finding that, while all samples felt more negative toward outgroups than their ingroup, several samples rated high-status outgroups as equally (or even more) human than their ingroup (Bruneau, Kteily, & Laustsen, 2018). Moreover, neuroimaging evidence suggests that dehumanization and negative affect have distinct neural underpinnings (Bruneau, Jacoby, et al., 2018).

Additionally, scholars have offered two key clarifications of the dehumanization hypothesis. First, dehumanization is not all or none—perpetrators can recognize their victims possess some capacities characteristic of humans while nonetheless believing their victims fall beneath the standards representing full humanity (Kteily & Landry, 2022; Vaes et al., 2021). For instance, although devout Nazis recognized that Jews were biological *Homo sapiens*, they also believed that Jews lacked moral qualities essential to being "truly" human (Phillips, 2022; Steizinger, 2018). Second, dehumanization is compatible with morally motivated violence (cf. Rai et al., 2017). By casting its target beneath the human pale, dehumanization can render them irredeemably depraved, an implacable threat, and incapable of change (Bar-Tal, 1989; Smith, 2021b)—making violence seem morally necessary and even righteous (Fincher et al., 2018; Kteily & Landry, 2022, p. 234). In this manner, dehumanization may go beyond dislike to promote particularly extreme violence. Indeed, recent work finds that dehumanization robustly predicts support for extreme violence (i.e., war crimes and political murder), but general negative affect does not (Landry, Druckman, & Willer, 2024; Landry, Fincher, et al., 2024).

Limitations to Adjudicating Between Competing Perspectives on Dehumanization

Studies that have attempted to dissociate dehumanization from dislike face a key limitation. Namely, they typically conceptualize dislike as general negative affect and operationalize it as cold feelings on a "feeling thermometer" (Haddock et al., 1993). This captures the global affective evaluation thought to be a key component of prejudice (Allport, 1954), but not the intense antipathy or attribution of undesirable traits argued to be confounded with dehumanization (Lang, 2020; Over, 2021; Rai et al., 2017). In principle, this unaccounted variance in dislike could be soaked up by the dehumanization measure, making it appear that the constructs are separable when in fact measures of dehumanization are simply capturing extreme dislike. Thus, the restrictive conceptualization and measurement of dislike in past research has impeded a resolution of competing perspectives on dehumanization's role in violence. A large set of studies, extensively measuring dislike across many contexts, is needed to conclusively adjudicate between them.

The Present Research: Evaluating Competing Perspectives on the Dehumanization Hypothesis

The dehumanization hypothesis has inspired extensive research and practice attempting to address intergroup violence (e.g., Kelman, 1973; Stanton, 2023), so resolving this debate is crucial. If dehumanization is just dislike, then this investment of intellectual, monetary, and social capital is misguided. Moreover, the extensive body of prior theory and research must be reconsidered with a completely different lens: one of dislike. But if dehumanization has a uniquely powerful impact on support for violence, perhaps even greater attention should be directed toward it.

Therefore, we test the reality and explanatory power of dehumanization. We do so through three complementary studies that use multiple methods, diverse samples, and extensive measures of dislike. First, we meta-analyze existing studies on dehumanization and dislike to determine whether either explain unique variance in support for violence. Then, we test the robustness and generalizability

of this effect in new studies using improved measures of dislike and spanning four continents. Finally, we experimentally isolate dehumanization's role in promoting support for violence. Collectively, these studies clarify our understanding of the psychology promoting support for violence and can inform efforts to address it.

Scope of the Present Research

We assess support for[3] violence—inflicting severe physical harm on, or killing, a target (Anderson & Bushman, 2002, p. 29). We conceptualize dehumanization as the explicit and blatant denial of a target's humanity (Kteily & Landry, 2022, p. 227). However, a rich body of work has uncovered a variety of subtler and/or implicit ways we can overlook the humanity of others (Landry & Seli, 2024). We focus on explicit and blatant dehumanization because most work implicating dehumanization in (support for) violence focuses on this variety (see "Foundations of the Dehumanization Hypothesis" section),[4] and such dehumanization is most problematically intertwined with dislike (Rai et al., 2018).[5] Thus, readers should evaluate the following studies with respect to explicit, blatant dehumanization's impact on support for violence.

Transparency and Openness

All studies reported in this article were preregistered, and all deviations are reported in the "Deviations from Preregistration" section of the Supplemental Material. The preregistration for our meta-analysis can be found at: https://osf.io/k28zq. The preregistrations for our other studies, as well as all study materials, analysis code, data, and Quarto .html files containing the results (Allaire et al., 2022), can be found at our Open Science Framework (OSF) repository: https://osf.io/2r4cu/ (Landry et al., 2025).

Meta-Analytic Test of Dehumanization's Unique Relationship With Support for Violence

We first meta-analyzed the relative effects of dehumanization and dislike on support for violence in the existing literature. As will be described below, our search strategy allowed us to analyze a much larger body of studies than the few prior ones directly attempting to dissociate dehumanization from dislike, allowing for a more comprehensive test of dehumanization's unique effect. We structure this meta-analysis around four research questions:

1. What are the zero-order relationships between (a) dehumanization and support for violence and (b) dislike and support for violence?
2. Are these relationships moderated by how the constructs were measured?
3. Do dehumanization and/or dislike explain unique variance in support for violence?
4. Do dehumanization and/or dislike explain unique variance in support for violence, after accounting for additional constructs that also covary with support for violence?

In what follows, we first articulate the construct definitions guiding this research. We then describe our search strategy and how data were extracted from eligible records (further details are provided in the Supplemental Material section "Meta-Analysis: Supplemental Procedure"). Finally, we report the results and consider their implications.

Construct Definitions

We defined *dehumanization* as the explicit and blatant denial of a target's humanity. We defined *dislike* as negative feelings, emotions, or attitudes toward a target. Along with general negative affect (e.g., cold feelings; Haddock et al., 1993), this includes intense negative emotions (e.g., anger and hatred; Bar-Tal et al., 2007; Mackie et al., 2000) and prejudicial attitudes (e.g., racist, sexist, or homophobic attitudes; Glick & Fiske, 1996; Herek, 2000; McConahay, 1986). Finally, we defined *violence* as inflicting severe physical harm on, or killing, a target.

Although we primarily focus on dehumanization and dislike, other psychological constructs also covary with support for violence (e.g., Jahnke et al., 2022; Wolfowicz et al., 2021). In the present meta-analysis, we consider five such covariates for a more stringent test of dehumanization's unique effect (see Research Question 4).[6] Specifically, we considered individual differences in *trait aggression* (Anderson & Bushman, 2002) and the *"dark" personality traits* (i.e., psychopathy, narcissism, Machiavellianism, and sadism; Međedović & Petrović, 2015), both of which may predispose individuals to support violence (e.g., Kalmoe, 2014; Paulhus et al., 2018). We also considered three social ideologies—beliefs about the proper social order and how it should be achieved (Jost et al., 2009)—that are especially relevant to intergroup violence: *social dominance orientation* (SDO), an aversion to egalitarianism and motivation to enforce hierarchical differentiation between groups (Pratto et al., 1994); *right-wing authoritarianism* (RWA), a tendency to perceive the world as dangerous, submit to authority, and rigidly adhere to social norms (Altemeyer, 1988); and *ideological conservatism*, a dispositional resistance to change and preference for the status quo (Jost et al., 2009). Despite their important differences, those higher in these ideologies tend to be more aggressive toward outgroups (Altemeyer, 1988; Nilsson & Jost, 2020; Pratto et al., 1994).

[3] The fact that we assess support for violence, rather than violence itself, is a key limitation because attitudes do not always predict behavior (LaPiere, 1934; Wicker, 1969). Despite ethical and practical challenges, future research should test dehumanization's unique impact on violent behavior (e.g., using archival data).

[4] Other varieties of dehumanization have also been implicated in support for violence (e.g., Goff et al., 2008), but when their relative effects are compared, explicit, blatant dehumanization is generally the strongest predictor (e.g., Kteily et al., 2015, Studies 2B, 3B, 5). Still, implicit/subtle dehumanization is often implicated in harm-doing that falls short of violence (i.e., severe physical harm or killing) but can nonetheless be dire (e.g., reduced prosociality; Andrighetto et al., 2014). More work is needed to identify how different varieties of dehumanization promote different forms of harm, a point we return to in the General Discussion (see also Waytz & Schroeder, 2014). For thorough reviews on varieties of dehumanization, see Haslam and Loughnan (2014), Kteily and Landry (2022), and Leyens et al. (2007).

[5] Though there are active debates about whether other varieties of dehumanization are also confounded with dislike (e.g., Enock et al., 2021; Vaes, 2023).

[6] We selected these covariates based on our preexisting knowledge of the literature, as we expected them to be measured in many studies that we would ultimately include in the meta-analysis.

Search Strategy

Records eligible for inclusion must have employed a correlational or experimental design and measured (a) dehumanization and support for violence, (b) dislike and support for violence, or (c) all three constructs. This allows us to garner a much larger body of records than the few prior studies directly attempting to dissociate dehumanization from dislike, allowing for a more comprehensive test of dehumanization's unique effect.

We identified eligible records through five sources: article database and register searches ($n = 22$), backward searches of the eligible articles from these searches ($n = 14$), author outreach ($n = 10$), publicly available data ($n = 1$), and data sets from previous studies conducted by our research team ($n = 41$). A total of 88 records ($k = 120$; $N = 128{,}022$) met our inclusion criteria. Further details of our search and screening process can be found in the "Search Procedure" section of the Supplemental Material (and see Supplemental Figure S2 for a Preferred Reporting Items for Systematic Reviews and Meta-Analyses chart; Page et al., 2021), and a descriptive table of all records in the meta-analysis can be found at our OSF repository: https://osf.io/2r4cu/.

Data Extraction: Effect Sizes and Moderators

Further details on extraction of effect sizes and coding of moderators can be found in the Supplemental Material ("Extraction of Effect Sizes" and "Coding of Moderators" sections).

In each study, we extracted the zero-order correlation coefficients between our constructs of interest (dehumanization, dislike, support for violence, and the covariates) and the corresponding sample sizes. To ensure data quality, after all effects were entered into the data sheet, two members of the research team jointly reviewed all the extracted effect and sample sizes to identify and correct any errors. Five values (0.12%) were corrected before conducting the meta-analysis.

We coded two potential moderators of the relationships between dehumanization, dislike, and support for violence. First, to determine whether these relationships were influenced by methodological quality, we coded studies' risk of bias. Second, because many measures of dehumanization, dislike, and support for violence exist, we coded aspects of these measures that may influence their relationships.[7]

Regarding risk of bias, we used six criteria specified in Siddaway et al.'s (2019) guidelines for systematic reviews in psychology and Nudelman and Otto's (2020) Risk of Bias Utilized for Surveys Tool (e.g., whether the measures were sufficiently reliable). Two coders jointly evaluated each study on these criteria. Then, the first author independently evaluated each study on these criteria. Agreement was high (97%), and in the few instances where there was a discrepancy, the final decision was made by the first author. Three additional criteria were coded solely by the first author, for a total of nine risk of bias criteria.

Regarding construct measurement, we coded whether dehumanization was measured using the predominant blatant dehumanization measure—the Ascent of Man scale (Kteily et al., 2015)—or in some other way (see Supplemental Table S1 for the dehumanization measures included in this meta-analysis). We coded whether dislike was measured as general negative affect (e.g., cold feelings; Haddock et al., 1993), intense negative emotions (e.g., anger; Bruneau & Kteily, 2017), or prejudicial attitudes (e.g., homophobia; Herek, 1988). We coded whether support for violence was measured as relatively minor physical harm (e.g., hitting or kicking),[8] severe physical harm (e.g., torture or rape), or killing. The lead author solely coded these moderators.

Results

All analyses were done in R, Version 4.3.1, using the *metafor* (Viechtbauer, 2010), *ClubSandwich* (Pustejovsky, 2024), and *metaSEM* packages (Cheung, 2015). Additional details on our analysis plan and results can be found in the Supplemental Material ("Meta-Analysis: Supplemental Results").

Research Question 1: What Are the Zero-Order Relationships Between Dehumanization, Dislike, and Support for Violence?

To answer the first research question, separate meta-analyses were performed for the correlations between (a) dehumanization and support for violence, (b) dislike and support for violence, and (c) dehumanization and dislike. We used a multilevel meta-analytic model to account for our data's nested structure (Van den Noortgate et al., 2013; see "Analysis Plan" in the Supplemental Material). Correlations were first transformed to Fisher's z values before being combined in the meta-analysis, and robust variance estimation was used to obtain sandwich standard errors (Pustejovsky & Tipton, 2022). Afterward, mean effect estimates and confidence intervals were back-transformed to the correlation scale.

Figure 1 presents all observed correlations with their 95% confidence intervals. Most correlations are positive: 98% for *dehumanization–support for violence* ($r_{median} = .32$), 72% for *dislike–support for violence* ($r_{median} = .11$), and 98% for *dehumanization–dislike* ($r_{median} = .40$).

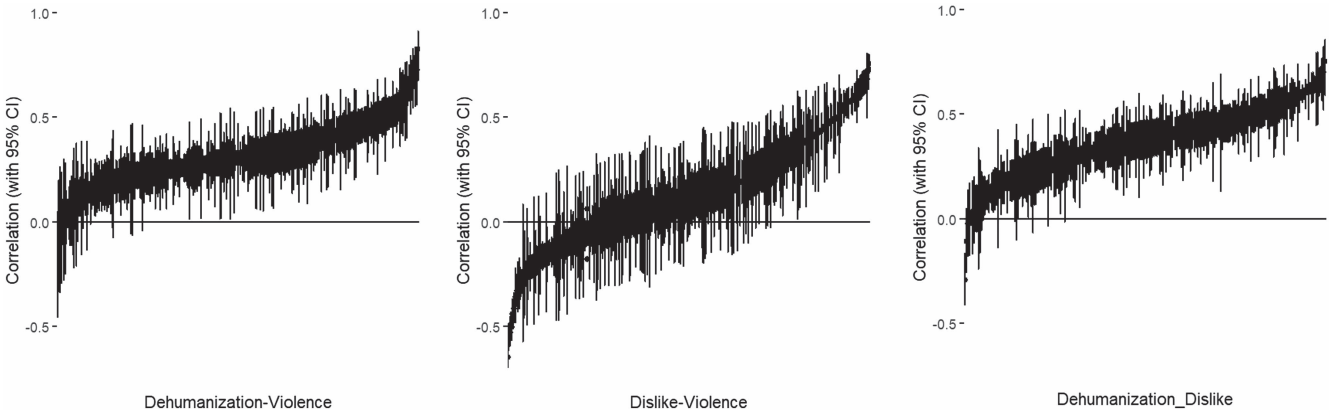
The multilevel meta-analyses revealed a large correlation between dehumanization and support for violence, $r = .35$ [.31, .38], $t(56.2) = 18.3$, $p < .001$, and a smaller correlation between dislike and support for violence, $r = .16$ [.10, .21], $t(78) = 5.58$, $p < .001$. There was also a large correlation between dehumanization and dislike, $r = .40$ [.36, .44], $t(48.4) = 17.6$, $p < .001$.

Sensitivity Analyses for Research Question 1. Five sets of sensitivity analyses demonstrate these effects are robust (see "Sensitivity Analysis" section in the Supplemental Material). First, the effects were not influenced by studies' risk of bias. Second, we found very little evidence for publication bias when testing for this in three different ways. Third, the effects were not strongly influenced by any particular projects, studies, samples, or effect sizes. Fourth, the

[7] We also coded four additional moderators: study design, sample type, the target being evaluated, and how concretely support for violence was measured. Descriptions of these additional moderators are included in the Supplemental Material ("Coding of Moderators" section), and the results are included in Supplemental Tables S6–S8. One noteworthy result was that dehumanization's effect was strongest when the target of evaluation was a wartime enemy or moral norm violator, consistent with seminal accounts implicating dehumanization in extreme intergroup conflict (e.g., Bar-Tal, 1989) and moral exclusion (Opotow, 1990).

[8] We note that we define violence as severe physical harm or killing (and operationalized it as such in our database search). However, without objective criteria to determine what constitutes "severe," we decided to retain studies that measured support for comparatively minor forms of violence.

Figure 1
Observed Correlations With 95% CIs



Note. CI = confidence interval.

effects replicated with another meta-analytic model that accounts for the correlation between effect sizes from the same sample (Pustejovsky & Tipton, 2022). Fifth, the effects replicated when our research team's unpublished data sets were removed.

In sum, there is a robust correlation between each pair of variables. Yet, observed effect sizes vary considerably (Figure 1), and only a relatively small part of them is explained by random sampling variation (Supplemental Table S5). This calls for moderator analyses that may explain additional variance.

Research Question 2: Are the Relationships Between Dehumanization, Dislike, and Support for Violence Moderated by How the Constructs Were Measured?

To answer the second research question, the moderators (type of dehumanization measure, type of dislike measure, and extremity of support for violence measure) were introduced individually in the multilevel meta-analytic model, and their significance was evaluated via Wald tests with robust standard errors and Satterthwaite approximated degrees of freedom. For the full results of all moderation analyses, see Supplemental Tables S6–S8.

The *dehumanization–support for violence* relationship was not moderated by how dehumanization was measured, $F(1, 7.42) = 0.28$, $p = .61$. However, the *dislike–support for violence* relationship was moderated by how dislike was measured, $F(2, 3.28) = 95.1$, $p = .001$. Specifically, dislike had a greater effect when measured as intense negative emotions ($r = .25$, $p = .004$) or prejudicial attitudes ($r = .33$, $p < .001$) than as general negative affect ($r = .09$, $p = .003$).

The omnibus tests for moderation by extremity of the support for violence measure were not significant for *dehumanization–support for violence*, $F(3, 3.66) = 3.13$, $p = .21$, nor *dislike–support for violence*, $F(3, 7.08) = 1.75$, $p = .24$. Still, it is notable that dehumanization had a numerically stronger relationship with support for extreme physical harm and killing (rs = .35 and .37, respectively; both $p < .001$) than with minor physical harm ($r = .13$, $p = .24$). Dislike, on the other hand, showed a numerically weaker relationship with support for killing ($r = .13$, $p = .002$) than with minor ($r = .22$, $p = .06$) or severe harm ($r = .29$, $p < .001$).

Research Question 3: Does Dehumanization and/or Dislike Explain Unique Variance in Support for Violence?

For the third research question, we used meta-analytic structural equation modeling (Cheung, 2015). In the first stage, a multivariate meta-analysis was performed to obtain an estimate of the correlation and variance–covariance matrices for dehumanization, dislike, and support for violence (presented in Supplemental Tables S9 and S10). In a second stage, we regressed support for violence on dehumanization and dislike simultaneously (within the structural equation model framework). Predictors were allowed to covary, and 95% confidence intervals were constructed for the regression coefficients to evaluate their significance.

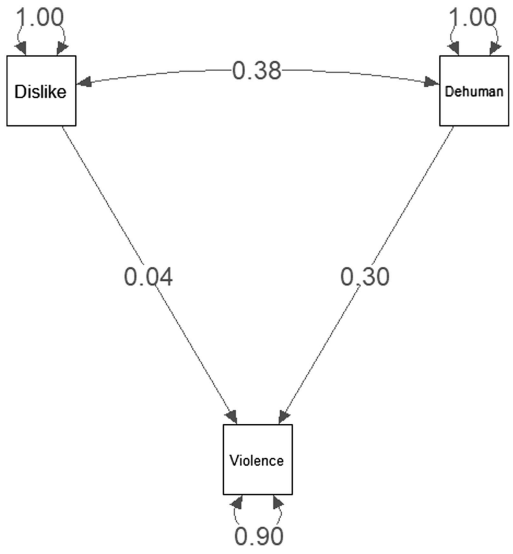
In this model, dehumanization emerged as a significant predictor of support for violence over and above dislike, $\beta = .30$ [.21, .42]. Conversely, dislike did not predict support for violence after accounting for dehumanization, $\beta = .04$ [−.09, .15] (Figure 2). These results are confirmed by a likelihood ratio test comparing the fit of this model to a model with the dehumanization coefficient constrained to zero, $\chi^2(1) = 76.63$, $p < .001$. Conversely, the effect of dislike is not significant after controlling for dehumanization, $\chi^2(1) = 0.36$, $p = .54$.

Research Question 4: Does Dehumanization Continue to Explain Unique Variance in Support for Violence After Accounting for Dislike and the Personality Covariates?

We used meta-analytic structural equation modeling in the same manner as for Research Question 3, but now also included one of the five covariates: trait aggression, the "dark" personality traits, SDO, RWA, and conservatism. In each model, dehumanization continued to strongly predict support for violence (βs ranged from .25 [.17, .36] to .34 [.27, .43]). See the Supplemental Material section titled "Dehumanization's Unique Relationship With Support for Violence Is Robust to Covariates" for detailed results.

Figure 2

Parameter Estimates of the Multiple Regression Model



Discussion

In the existing literature, dehumanization strongly predicted support for violence after accounting for dislike, as well as several personality covariates and methodological factors (e.g., how dehumanization was measured and studies' risk of bias). Notably, dehumanization had a numerically stronger effect on support for more extreme violence. This accords with seminal theories that dehumanization promotes extreme violence (e.g., Kelman, 1973) and applied work leveraging these theories to inform atrocity prevention (e.g., Stanton, 2023).

Nonetheless, although we aimed to comprehensively account for dislike in our literature search (see "Search Procedure" section in Supplemental Material), most of these effects consisted of general negative affect (63%). This is important because general negative affect showed a substantially weaker relationship with support for violence than alternative forms of dislike. Thus, this study is still a limited test of dehumanization's unique relationship with support for violence. Moreover, the diversity of populations in this study was also limited, as nearly all our effects came from three Western, educated, industrialized, rich, and democratic countries (Henrich et al., 2010): the United States, the United Kingdom, and Germany (97%). Our next study addresses these limitations.

Cross-Cultural Test of Dehumanization's Unique Relationship With Support for Violence

We launched seven new data collections to determine the robustness and generalizability of dehumanization's relationship with support for violence. To determine robustness, we measured the intense dislike that is potentially confounded with dehumanization (Lang, 2020; Over, 2021; Rai et al., 2017). Moreover, we directly tested whether dehumanization is merely a metaphor, or if those who rated the target group as less than human intended their response to be taken literally.

To determine generalizability, we studied four cultural contexts where intergroup violence is either ongoing or a salient threat: the United States, Russia and Ukraine, Israel and the Palestinian diaspora, and India (see Table 1). U.S. participants evaluated three groups found to elicit violent sentiments among Americans: Islamic terrorists (Kteily et al., 2015), the Russian soldiers who have invaded Ukraine (Landry, Fincher, et al., 2024), and pedophiles (Viki et al., 2012). Russians and Ukrainians evaluated one another during their war which, at the time of data collection, had killed nearly half a million (Glantz, 2024) and had been darkened by unambiguous war crimes—including summary executions, indiscriminate bombing, and torture (Amnesty International, 2022; Human Rights Watch, 2022). Likewise, Israelis and Palestinians evaluated one another in the month following Hamas' terror attack, which killed over 1,100 Israelis in the deadliest day for Jews since the Holocaust, and the ensuing war in the Gaza Strip. At the time of data collection, this war had killed over 8,000 Palestinians (United Nations, 2023b), displaced millions more (Internal Displacement Monitoring Centre, 2023), and precipitated a humanitarian crisis (United Nations, 2023a). Finally, Indian Hindus and Muslims evaluated one another amid a backdrop of religious violence in the subcontinent (Basu, 2021), including several high-profile murders and riots in the months preceding data collection (Human Rights Watch, 2023; Travelli & Kumar, 2023).

Given the gravity of these conflicts, we measured support for particularly extreme acts of violence (e.g., war crimes and genocide). In line with our meta-analytic results, we expected dehumanization to uniquely and powerfully predict such support.

Method

We report how we determined our sample size, all data exclusions, and all measures in this study. Additional details can be found in the Supplemental Material ("Cross-Cultural Studies: Supplemental Method" section).

Participants

Although we assumed the relationships between our measures would stabilize around 250 observations (Schönbrodt & Perugini, 2013), we aimed to recruit as many participants as feasible given monetary and time constraints. This led us to budget for final sample sizes of 400 participants in the U.S. sample and 500 in all other samples.[9]

We recruited a convenience sample of 406 Americans via CloudResearch's Connect platform (Hartman et al., 2023). We recruited representative samples of 685 Russians and 560 Ukrainians via Info Sapiens (https://www.sapiens.com.ua/en/index). We recruited a representative sample of 1,189 Jewish Israelis via iPanel (https://www.ipanel.co.il/en/). We recruited a convenience sample of 2,437 Palestinians via Centre Euro Arabe (see "Palestinian Sample" section in the Supplemental Material for details on this sample). We recruited representative samples of 1,244 Hindus and 2,823 Muslims via CloudResearch's Prime Panels (Chandler et al., 2019).

[9] We budgeted for fewer participants in the U.S. sample because they evaluated three target groups (as opposed to a single target group in all other samples), which substantially increased power.

Table 1
Overview of the Samples Comprising Our Cross-Cultural Studies (N_{Total} = 3,773)

Sample	Context	Representativeness	Data collection
United States (n = 396)	Evaluated three targets found to be subject to violent sentiments in the United States: Russian soldiers, Islamic terrorists, pedophiles	None (convenience sample)	October 2, 2023
Russians (n = 548)	Evaluated Ukrainians 2 years after launching a full-scale invasion that has resulted in over half a million deaths	Data weighted to approximate the Russian population on age, gender, and region	November 6, 2023–November 21, 2023
Ukrainians (n = 534)	Evaluated Russians 2 years after being invaded in a war that has resulted in over half a million deaths	Data weighted to approximate the Ukrainian population on age, gender, region, and settlement size	November 23, 2023–December 4, 2023
Israelis (n = 900)	Evaluated Palestinians 1 month after Hamas' October 7 terror attacks and Israel's subsequent bombing of the Gaza Strip	Sample quota-matched to the age, gender, region, and religiosity demographics of the Jewish Israeli population	November 5, 2023–November 14, 2023
Palestinians (n = 426)	Evaluated Israelis 1 month after Hamas' October 7 terror attacks and Israel's subsequent bombing of the Gaza Strip	None (convenience sample)	November 9, 2023—November 19, 2023
Indian Hindus (n = 484)	Evaluated Muslims against the backdrop of interreligious violence in India	Sample quota-matched to the age, gender, and regional demographics of the Indian Hindu population	March 5, 2024–March 28, 2024
Indian Muslims (n = 485)	Evaluated Hindus against the backdrop of interreligious violence in India	Sample quota-matched to the age, gender, and regional demographics of the Indian Muslim population	March 5, 2024–March 29, 2024

After applying preregistered exclusions (see "Preregistered Exclusions" section in the Supplemental Material), our final samples consisted of 396 Americans (M_{Age} = 39, SD_{Age} = 12; 57% male), 548 Russians (M_{Age} = 42, SD_{Age} = 13; 47% male), 534 Ukrainians (M_{Age} = 40, SD_{Age} = 13; 46% male), 900 Israelis[10] (M_{Age} = 38, SD_{Age} = 15; 48% male), 426 Palestinians[11] (M_{Age} = 28, SD_{Age} = 9; 35% male), 484 Hindus (M_{Age} = 37, SD_{Age} = 14; 54% male), and 485 Muslims (M_{Age} = 36, SD_{Age} = 12; 52% male). Detailed demographic information for each sample, including a comparison of the Russian, Ukrainian, Israeli, Hindu, and Muslim samples to their respective national demographics, is presented in Supplemental Tables S12–S18.

With these sample sizes, we were sensitive to detect the following effects with 80% power in our preregistered regression models: f^2 = .01 in the U.S. sample, f^2 = .03 in the Russian sample, f^2 = .03 in the Ukrainian sample, f^2 = .02 in the Israeli sample, f^2 = .04 in the Palestinian sample, f^2 = .03 in the Hindu sample, and f^2 = .03 in the Muslim sample.

Measures

To determine the robustness of dehumanization's unique relationship with support for violence, along with *general negative affect*, we measured more intense forms of dislike that are potentially confounded with dehumanization (Lang, 2020; Over, 2021; Rai et al., 2017). For one, we measured *intense negative emotions*—specifically the three negative moral emotions of contempt, anger, and disgust (Rozin et al., 1999; see Matsumoto et al., 2015), as well as hatred (Halperin, 2008, 2011). Given concerns that so-called "dehumanization" may instead simply be a way to attribute undesirable traits to the target (Bloom, 2022; Enock & Over, 2023; Rai et al., 2017), we also measured attributions of *immorality* and *unintelligence*, as well as *global trait derogation*. Finally, to test whether dehumanization is merely an expression of perceived difference or an inability to comprehend the target, we measured respondents' *psychological distance* from the target (Trope & Liberman, 2010). Along with these measures of dislike, we accounted for three individual differences that reliably covary with support for violence: *trait aggression* (Anderson & Bushman, 2002), *SDO* (Pratto et al., 1994), and *RWA* (Altemeyer, 1988; see the "Construct Definitions" section in the preceding meta-analysis).

Moreover, as a direct test of dehumanization's construct validity, at the end of the study, we followed up with respondents who reported high levels of dehumanization and asked whether they intended their responses to be taken metaphorically or literally.

For information on how these survey materials were translated for each cultural context, see the Supplemental Material ("Detailed Measures" section).

[10] The Israeli sample is so much larger than our intended sample size due to an error the survey company made in matching the sample to regional demographics. They had to overrecruit to approximate the regional demographics of Israel's population.

[11] Note that the Palestinian sample had very high attrition (83%), though we did not observe differential attrition based on participants' age, gender, education, income, whether they had lived in Gaza, or whether they knew anyone living in Gaza at the time of the study (see "Palestinian Sample" section in the Supplemental Material for detailed results and speculation on factors contributing to attrition).

Differences in Measures Across Samples. Due to budget considerations, we did not measure trait aggression, SDO, or RWA in the Russian or Ukrainian samples. Likewise, we only measured global trait derogation and psychological distance in the Russian, Ukrainian, Israeli, and Palestinian samples. Finally, due to an unfortunate programming error, the Palestinian sample did not receive the dehumanization follow-up question. (See Supplemental Table S19 for an overview of all measures administered to each sample.)

Dehumanization. We measured dehumanization in two ways (counterbalanced). For one, participants were asked "How human do you consider [target] to be?" They responded using a 101-point slider scale corresponding to the Ascent of Man image (Kteily et al., 2015), with endpoints labeled *not at all human* (0) and *fully human* (100). Scores were reversed such that higher values indicated greater dehumanization. We also used a three-item measure of dehumanizing sentiments (e.g., "[target] don't seem truly human"), which participants evaluated using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*; $\omega \geq .88$). Then, we *z*-scored the Ascent of Man and dehumanizing sentiments and combined them into a single dehumanization composite ($r \geq .71$). The exception was the Muslim sample, where these measures' correlation did not meet our preregistered threshold for combining them. Therefore, as preregistered, we used the dehumanizing sentiments as our primary measure of dehumanization for the Muslim sample. (Results hold when using the composite; see Section 3.8.7 of "Cross-Cultural Analyses.html" on our OSF repository: https://osf.io/2r4cu/.)

General Negative Affect. For the U.S., Russian, Ukrainian, and Israeli samples, we used two measures of general negative affect (counterbalanced). For one, participants were asked "How warm or cold do you feel toward [target]?" They responded using a 101-point feeling thermometer (Haddock et al., 1993), ranging from *extremely cold* (0) to *extremely warm* (100). Scores were reversed such that higher values indicated colder feelings. We also used a three-item measure of disliking sentiments (e.g., "I dislike [target]"), which participants evaluated using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*; $\omega \geq .89$). Then, we *z*-scored the feeling thermometer and disliking sentiments and combined them into a single composite measure of general negative affect ($r \geq .63$). We also administered these measures to the other samples, but their correlation did not meet our preregistered threshold for combining them. Therefore, as preregistered, we used the feeling thermometer in the Palestinian sample and the disliking sentiments in the Hindu and Muslim samples. (Results hold when using the composite; see Section 3.9 of "Cross-Cultural Analyses.html" on our OSF repository: https://osf.io/2r4cu/.)

Intense Negative Emotions. In each sample, participants rated how much they felt contempt, anger, disgust, and hatred (Halperin, 2011; Rozin et al., 1999) toward the target group using 7-point Likert scales, with higher scores indicating greater negative emotions ($\omega \geq .84$). The specific items differed slightly across cultural contexts, so details are provided in the Supplemental Material ("Detailed Measures" section).

Attributions of Immorality. In each sample, participants rated how well three immoral traits characterized the target group (e.g., *immoral*, *evil*, and *cruel*) using 7-point Likert scales, with higher scores indicating greater immorality ($\omega \geq .84$). The specific items differed slightly across cultural contexts, so details are provided in the Supplemental Material ("Detailed Measures" section).

Attributions of Unintelligence. In each sample, participants were asked how well the traits *unintelligent*, *stupid*, and *dumb* characterized the target group using 7-point Likert scales (1 = *not at all well*, 7 = *extremely well*; $\omega \geq .91$).

Global Trait Derogation. This measure was only administered to the Russian, Ukrainian, Israeli, and Palestinian samples. Participants evaluated the statement "[target] have lots of negative traits" on a 7-point Likert scale (1 = *[target] have no negative traits*, 7 = *[target] have every negative trait in the book*).

Psychological Distance. This measure was only administered to the Russian, Ukrainian, Israeli, and Palestinian samples. Participants evaluated three statements, each measured with 7-point Likert scales, asking how different, distant, and incomprehensible the target group seemed to them, with higher scores indicating greater psychological distance ($\omega \geq .59$). The scale anchors differed across items, so details are provided in the Supplemental Material ("Detailed Measures" section).

Trait Aggression. This measure was only administered to the U.S., Israeli, Palestinian, Hindu, and Muslim samples. Participants completed the *Physical Aggression* subscale of the Brief Aggression Questionnaire (Webster et al., 2014; $\omega \geq .61$). Details are provided in the Supplemental Material ("Detailed Measures" section).

SDO. This measure was only administered to the U.S., Israeli, Palestinian, Hindu, and Muslim samples. Participants evaluated four items from the SDO_7 scale (Ho et al., 2015; $\omega \geq .58$). Details are provided in the Supplemental Material ("Detailed Measures" section).

RWA. This measure was only administered to the U.S., Israeli, Palestinian, Hindu, and Muslim samples. Participants completed the Very Short Authoritarianism scale (Bizumic & Duckitt, 2018; $\omega \geq .63$). Details are provided in the Supplemental Material ("Detailed Measures" section).

Support for Violence. Americans evaluated three items asking about their desire to (1) execute target group members, (2) "wipe [target] off this world," and (3) "annihilate [target] by any means necessary." Russians and Ukrainians evaluated 12 items assessing their support for committing war crimes against both enemy soldiers (e.g., "We should execute captured [target] soldiers") and civilians (e.g., "We should bomb major [target] cities, even if doing so kills many [target] civilians"). Israelis and Palestinians evaluated six items assessing their support for genocidal violence against the other side (e.g., "We should kill all [target]"). Hindus and Muslims evaluated three items assessing their support for killing extremist members of the other religion (e.g., "We should kill all [target] extremists"). In each sample, participants rated their agreement using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*; $\omega \geq .87$).

Dehumanization Follow-Up. In each sample except Palestinians, participants who rated the target group at 70 or less on the Ascent of Man scale were directed to a specialized block to gain insight into their response.[12] We first reminded them exactly where they placed the target group on the Ascent of Man measure. Then, we asked whether they responded *metaphorically*, "not because you really believe they are less than human, but rather, because you wanted to express some other attitude or belief about them (even though you think they are fully human)," or *literally*, "because, in

[12] Setting the threshold at 70 was arbitrary, but we felt it captured high levels of dehumanization while allowing sufficient variability to gain insight into the responses.

some sense, you believe they are truly less than human."[13] Then, participants advanced to open-ended questions intended to gain deeper insight into the reasons underlying their response, which are considered in the General Discussion (see also "Linguistic Analyses" section in the Supplemental Material).

Additional Measures. We included several additional measures that are not of relevance to the present study but are described in the Supplemental Material ("Detailed Measures" section).

Procedure

Additional details on the procedure can be found in the Supplemental Material ("Detailed Procedure" section).

The main study consisted of three blocks of measures.[14] The first block consisted of the personality covariates: trait aggression, SDO, and RWA. The next block consisted of the measures of dehumanization, general negative affect, intense negative emotions, attributions of immorality, attributions of unintelligence, global trait derogation, and psychological distance. The third block consisted of the support for violence measure. After completing these three blocks (except for Palestinians), the dehumanization follow-up was administered to respondents who rated the target group at 70 or less on the Ascent of Man scale.

Results

Additional details on our results can be found in the Supplemental Material ("Cross-Cultural Studies: Supplemental Results" section).

We used multivariate imputation by chained equations to impute missing values (van Buuren & Groothuis-Oudshoorn, 2011), but our results hold with the un-imputed data and two alternative imputation methods (see "Robustness Tests" section in Supplemental Material).

Descriptive statistics and scale reliabilities for all variables are reported in Supplemental Table S20, density plots depicting the variable distributions can be found in Supplemental Figures S13–S25, and heatmaps depicting their intercorrelations can be found in Supplemental Figures S26–S32.

Dehumanization's Unique Relationship With Support for Violence

In each sample, dehumanization showed a strong zero-order relationship with support for violence (Americans: $r = .64$; Russians: $r = .48$; Ukrainians: $r = .47$; Israelis: $r = .61$; Palestinians: $r = .54$; Hindus: $r = .46$; Muslims: $r = .55$; all $p < .001$). Several measures of dislike and personality covariates also showed zero-order relationships with support for violence (Supplemental Figures S26–S32), so we tested dehumanization's unique effect in each sample with a simultaneous linear regression.[15] Specifically, we regressed support for violence on dehumanization, the dislike measures, and (in applicable samples) the personality covariates. For the U.S., Israeli, Hindu, and Muslim samples, we also included preregistered demographic covariates. For the Russian and Ukrainian samples, the data were weighted to match their respective countries' population on age, gender, region—and for Ukrainians—settlement size.

Of primary interest, dehumanization predicted support for violence in each sample (Americans: $\beta = .36$ [.30, .41]; Russians: $\beta = .25$ [.16, .34]; Ukrainians: $\beta = .40$ [.29, .50]; Israelis: $\beta = .31$ [.24, .39]; Palestinians: $\beta = .35$ [.24, .45]; Hindus: $\beta = .14$ [.03, .26]; Muslims: $\beta = .25$ [.14, .37]), as well as when pooling all samples together ($\beta = .31$ [.28, .34], $p < .001$; see "Pooled Analysis" section in Supplemental Material). Figure 3 presents the point estimates for these regressions, and the full model outputs can be found in Supplemental Tables S21–S28. These effects were highly robust (see "Robustness Tests" section in Supplemental Material).

Finally, for each regression, we compared the strength of dehumanization's effect on support for violence with each of the other predictors in a series of nested model comparisons. In most of these comparisons (69%), dehumanization had a significantly stronger effect on support for violence than the other predictor. In the remaining comparisons, there was no significant difference (see "Cross-Cultural Studies: Comparing Dehumanization to Other Predictors" section in the Supplemental Material for details).

Metaphorical Versus Literal Dehumanization

We next focused on the subset of participants who rated the target group at 70 or less on the Ascent of Man scale ($n = 1{,}180$). Table 2 and Figure 4 compare the proportions of participants who indicated they genuinely believe the target group to be less than human ("literal dehumanizers") and those who indicated they were expressing some other attitude or belief about the target group ("metaphorical dehumanizers"). Substantial proportions of participants in each sample literally dehumanized the target group, ranging from 42% to 67% (Table 2).[16] Given the relatively low numbers of literal and metaphorical dehumanizers, we then pooled the samples together to maximize power. Across all samples, there was a significantly greater proportion of literal than metaphorical dehumanizers (59% vs. 41%), $\chi^2(1) = 33.90$, $p < .001$.

Finally, we tested the implications of literal dehumanization. Specifically, we regressed support for violence on a dummy variable denoting "dehumanizer type" (0 = metaphorical, 1 = literal), the quantitative dehumanization measure, and the measures of dislike common to all samples (general negative affect, intense negative emotions, attributions of immorality, and attributions of unintelligence). We did so with a multilevel model that specified random intercepts for sample. In this model, literal dehumanizers expressed greater support for violence than metaphorical dehumanizers,

[13] In the U.S., Israeli, Hindu, and Muslim samples, we also provided a third option where respondents could indicate they made a mistake when responding to this measure and had actually intended to rate the target as fully human. No Americans selected this option, but five Israelis, eight Hindus, and five Muslims did. These respondents are not considered in our following analyses of "metaphorical" and "literal" dehumanizers.

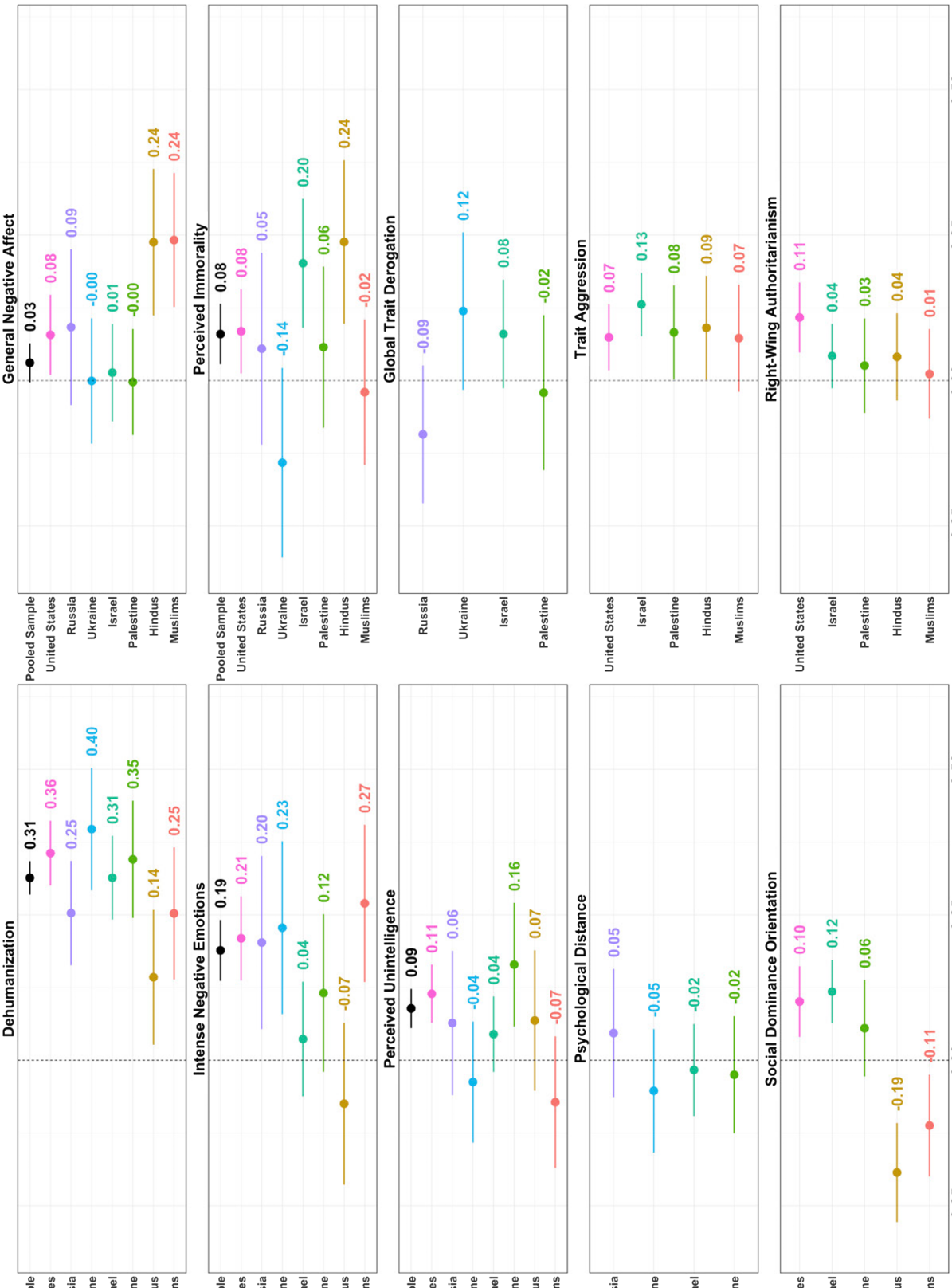
[14] Because U.S. participants evaluated three target groups, they completed all measures in the second and third blocks for a specific target group before proceeding to the next. Presentation of the three target groups was randomized. And if U.S. participants rated more than one of the target groups at 70 or less on the Ascent of Man scale, they were randomly presented with one of these groups for the dehumanization follow-up.

[15] In the U.S. sample, because each participant evaluated three target groups, we used a multilevel model that specified random intercepts for both "Participant" and "Target." (Dehumanization's relationship with support for violence was not moderated by target group; see Section 6.1 of "Cross-Cultural Analyses.html" on our OSF repository: https://osf.io/2r4cu/.)

[16] The converse is that sizeable proportions of our samples "metaphorically" dehumanized the target group, supporting notions that dehumanization can sometimes be metaphorical (e.g., Lang, 2020). Thus, a crucial future direction is identifying when dehumanization is "real" and when it is "just talk" (Smith, 2021a), which we consider in the General Discussion.

Figure 3

Simultaneous Linear Regression Results



Note. Standardized β coefficients with corresponding 95% confidence intervals. See the online article for the color version of this figure.

Table 2
Results of Chi-Square Tests for Differences in the Proportion of Metaphorical Versus Literal Dehumanizers in Each Sample and Pooled Across Samples

Sample	*N* (% of total sample)	% literal	% metaphorical	$\chi^2(1)$	*p*
U.S.	218 (55)	58	42	5.30	.021
Russians	84 (15)	42	58	2.33	.127
Ukrainians	381 (71)	67	33	45.04	<.001
Israelis	340 (38)	54	46	2.65	.104
Hindus	96 (20)	56	44	1.50	.221
Muslims	61 (13)	56	41	0.80	.370
Pooled Samples	1,180 (35)	59	41	33.90	<.001

Note. We applied Bonferroni corrections to the criterion for statistical significance ($p < .007$). Values in the "Pooled Samples" row do not account for the Palestinian sample, because they did not receive the dehumanization follow-up.

$b = 0.41$ [0.24, 0.59], $SE = 0.09$, $t(1, 170) = 4.68$, $p < .001$. That is, holding levels of "quantitative" dehumanization and dislike constant, someone who indicated literally dehumanizing the target group would support violence against them, on average, by 0.41 more points (on a 7-point scale) than someone who indicated their response was metaphorical.[17] See Supplemental Table S30 for full model output.

Discussion

This study illustrates the reality and relevance of dehumanization. Across ongoing conflicts spanning four continents, dehumanization was strongly associated with support for extreme intergroup violence. This effect held after extensively accounting for dislike and several personality covariates, and dehumanization was often the strongest predictor. Notably, dehumanization was often not a mere metaphor—in each sample, substantial proportions of respondents reported genuinely believing the target group was less than human. Such "literal" dehumanization had important implications—these respondents expressed greater support for violence than those who "metaphorically" dehumanized the target group, holding constant their quantitative dehumanization and dislike of the target group.

Collectively, our meta-analytic and cross-cultural studies demonstrate a strong, robust, and generalizable relationship between dehumanization and support for violence. We next sought stronger evidence that dehumanization promotes support for violence with a well-powered experiment.

Experimental Test of Dehumanization's Unique Impact on Support for Violence

Ethical and practical issues hinder experimental tests of the longstanding notion that dehumanization promotes violence (e.g., Kelman, 1973). Ethically, researchers may hesitate to induce dehumanizing and/or violent attitudes in naive participants. Practically, the scant research that *has* done so struggles to disentangle their dehumanization manipulation from dislike. For instance, describing a group as a "rotten, animalistic bunch" (vs. neutrally) was found to increase aggression against them (Bandura et al., 1975). However, the researchers did not account for dislike toward the group, which presumably was also increased and may have driven the increased aggression.

To surmount the ethical issue of inducing dehumanizing and/or violent attitudes, here we leverage an intervention found to *reduce* dehumanization and support for violence (Landry, Fincher, et al., 2024). To surmount the practical issue of disentangling dehumanization from dislike, we replicate the intervention study from Landry, Fincher, et al. (2024) but also extensively measure dislike.[18] We test whether the intervention's effect on decreased support for violence is uniquely mediated by reduced dehumanization (i.e., after accounting for reduced dislike).

Still, our reliance on cross-sectional mediation limits temporal inference in at least two ways (Bullock & Green, 2021; Fiedler et al., 2011). First, the alternative temporal sequence (that the intervention first reduces support for violence, which then reduces dehumanization) cannot be definitively ruled out. However, this is less likely when the independent variable is experimentally manipulated (rather than measured) and the alternative sequence is less theoretically plausible (MacKinnon et al., 2007), both of which are the case here. Second, it is possible that a third variable is driving the intervention's effect on both dehumanization and support for violence, which is precisely why we account for dislike. Nonetheless, we encourage readers to keep this methodological limitation in mind.

Method

We report how we determined our sample size, all data exclusions, all manipulations, and all measures in this study.

Participants

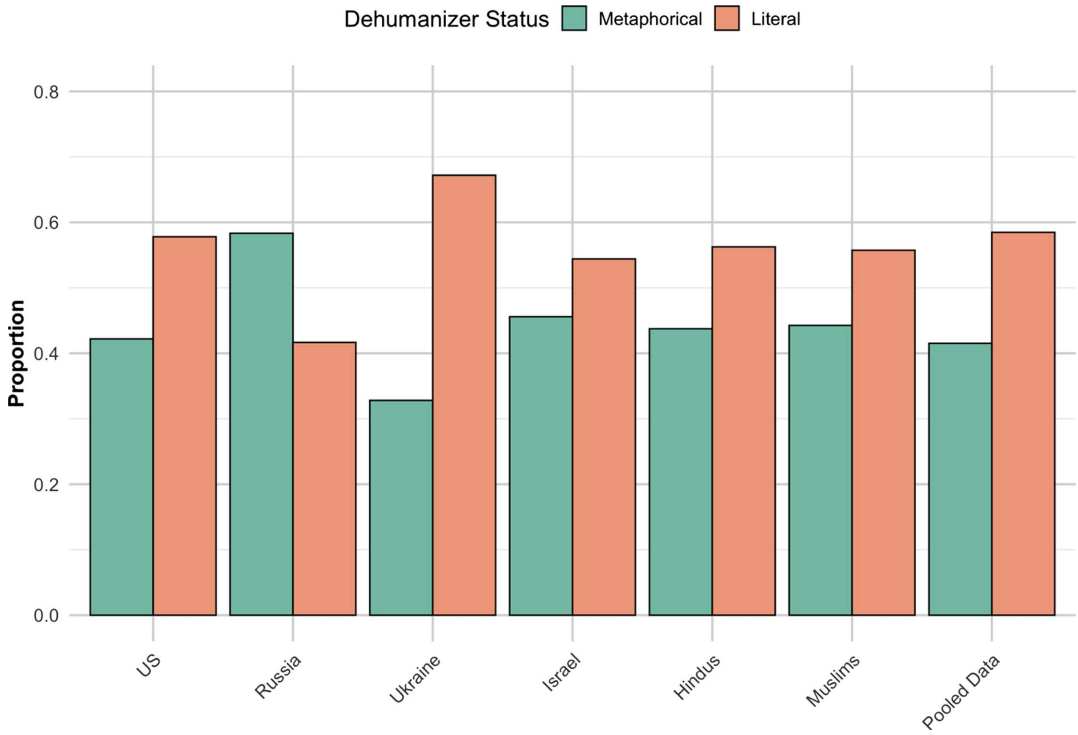
An a priori power analysis determined that 788 participants were required to detect a small effect ($d = 0.20$) of our intervention on reduced support for violence with 80% power (Faul et al., 2007). We

[17] And without holding "quantitative" dehumanization and dislike constant, but instead performing simple *t* tests, literal dehumanizers also reported greater support for violence, $M_{diff} = 0.86$ [0.66, 1.06], $SE_{diff} = 0.10$, $t(1,178) = 8.44$, $d = 0.50$, $p < .001$. Literal dehumanizers also scored higher on "quantitative" dehumanization and all measures of dislike. Moreover, literal dehumanizers were slightly younger and less well educated, but the two groups did not differ in terms of gender or income. For detailed results, see Sections 5.5 and 5.6 of "Cross-Cultural Analyses.html" on our OSF repository: https://osf.io/2r4cu/.

[18] Landry, Fincher, et al. (2024) accounted for general negative affect in their study, but not the more intense dislike potentially confounded with dehumanization.

Figure 4

Proportion of Metaphorical Versus Literal Dehumanizers in Each Sample and Pooled Across All Samples



Note. See the online article for the color version of this figure.

recruited an initial sample of 815 American participants via CloudResearch's Connect platform. Our final sample consisted of 753 participants who passed our opening attention check (see Procedure) and advanced to the main study ($M_{Age} = 39$, $SD_{Age} = 12$; 55% male; 68% White, 14% Black, 8% Asian, 7% Hispanic, 3% other/did not respond). With this sample size, we were sensitive to detect an effect of $d = 0.21$ with 80% power.

Intervention

Morality is considered essential to being human, so people often dehumanize perpetrators of egregious moral violations (Brandt & Reyna, 2011; Phillips, 2022). Indeed, following Russia's 2022 invasion of Ukraine—an act of aggression that catalyzed widespread moral outrage (Cohen, 2022)—a substantial proportion of Americans dehumanized Russian soldiers, which predicted their support for the Ukrainians retaliating against these soldiers with unambiguous war crimes (e.g., executing Russian prisoners of war; Landry, Fincher, et al., 2024, Study 1). Therefore, Landry, Fincher, et al. (2024, Study 3) aimed to reduce support for retributive war crimes with a media intervention highlighting Russian soldiers' fundamentally human moral capacities. Their intervention consisted of a news article describing Russian soldiers' moral agency and remorse (e.g., disobeying orders to advance and expressing regret about the invasion; Harding, 2022), which was then corroborated by video testimony from Russian soldiers themselves (e.g., expressing repugnance at their orders to attack peaceful Ukrainians and guilt for having "acted like Nazis").

Measures

Dehumanization ($r = .78$), general negative affect ($r = .80$), attributions of immorality ($\omega = .96$), and attributions of unintelligence ($\omega = .98$) were all measured as for the U.S. sample in the cross-cultural studies (with "Russian soldiers" as the target group here). Intense negative emotions were also measured as in that study, but with only four of the items: *contempt*, *fury*, *disgust*, and *hatred* ($\omega = .95$).

Support for Violence. Five items assessed Americans' support for the Ukrainians committing war crimes against Russian soldiers (e.g., "The Ukrainians should execute captured Russian soldiers"), using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*; $\omega = .93$).

Additional Measures. For exploratory purposes, we measured perceived lack of intrinsic value (e.g., "Russian soldiers are worthless"), which will not be considered further.

Procedure

Our procedure closely followed that of Landry, Fincher, et al. (2024; Study 3). The major difference is that we extensively measured dislike to isolate dehumanization's unique effect.

Upon entering the study, all participants were first presented with a short mock vignette and asked an attention check question about it. Those who answered incorrectly were immediately redirected to the end of the study. Eligible participants then advanced to an equipment check where they watched a short video and were asked what

they saw and heard. Only after answering correctly did they advance to the main study (if a participant answered incorrectly, they received an error message and were allowed to change their response).

Upon entering the main study, participants were randomly assigned to either receive the intervention ($n = 341$) or to an empty control condition ($n = 412$). Then, participants completed the measures of dehumanization, general negative affect, intense negative emotions, attributions of immorality, and attributions of unintelligence in randomized order. Finally, they reported their support for violence.

Results

Additional details on our results can be found in the Supplemental Material ("Supplemental Material for the Experiment" section). Descriptive statistics and reliabilities for the dependent variables within each experimental condition are presented in Supplemental Table S31, and their intercorrelations are presented in Supplemental Figures S33 and S34.

We first regressed support for war crimes on dehumanization and all dislike measures in a simultaneous linear regression. Dehumanization strongly predicted war crime support, $\beta = .51$ [.44, .58], $SE = 0.06$, $t(742) = 14.74$, $p < .001$ (see Supplemental Table S32 for the full model output), and did so to a greater extent than all the dislike measures (see "Experiment: Comparing Dehumanization to Other Predictors" section in the Supplemental Material for details).

We next tested the effect of the intervention on dehumanization, dislike, and support for war crimes. Consistent with Landry, Fincher, et al. (2024), the intervention reduced Americans' dehumanization of Russian soldiers, $M_{diff} = 0.44$ [0.32, 0.57], $SE_{diff} = 0.06$, $t(712) = 6.83$, $d = 0.48$, $p < .001$,[19] as well as their support for committing war crimes against them, $M_{diff} = 0.59$ [0.38, 0.80], $SE_{diff} = 0.11$, $t(746) = 5.54$, $d = 0.40$, $p < .001$. The intervention also reduced all measures of dislike (see Supplemental Figures S35–S40).

We then proceeded to our key test: whether the effect of the intervention on reduced support for war crimes was uniquely mediated by dehumanization. To do so, we performed a parallel mediation analysis using the PROCESS macro for R (Hayes, 2017). We entered a binary variable denoting experimental condition (0 = control, 1 = intervention) as the predictor, war crime support as the outcome, and dehumanization, general negative affect, intense negative emotions, attributions of immorality, and attributions of unintelligence as the parallel mediators. In this model, we also compared the strength of dehumanization's indirect effect against each of the other mediators by constructing a bootstrapped distribution, and corresponding 95% confidence interval, of the raw difference between their respective indirect effects (see Coutts & Hayes, 2023, pp. 3775–3776).

The intervention's effect on reduced war crime support was uniquely mediated by reduced dehumanization, $\beta_{indirect} = -.24$ [−.31, −.16], $SE = .04$. Intense negative emotions and attributions of unintelligence were also unique mediators, there was no significant indirect effect through attributions of immorality, and general negative affect acted as a suppressor (Figure 5). Notably, dehumanization's indirect effect was stronger than all forms of dislike (vs. intense negative emotions: $\beta_{indirect} = -.15$ [−.26, −.03], $SE = .06$; vs. unintelligence: $\beta_{indirect} = -.21$ [−.29, −.13], $SE = .04$; vs. immorality: $\beta_{indirect} = -.15$ [−.28, −.03], $SE = .06$; vs. general negative affect: $\beta_{indirect} = -.35$ [−.46, −.24], $SE = .05$).

Exploratory Analyses of Dehumanization's Unique Impact

We further tested whether dehumanization is distinct from dislike through factor analysis. We standardized all items comprising the dehumanization and dislike measures and then entered them into a principal axis exploratory factor analysis using a Promax rotation. Three factors emerged, which collectively explained 80% of the variance. Crucially, the dehumanization items emerged as a distinct factor (eigenvalue = 3.71; 21% of the variance explained). The general negative affect, intense negative emotions, and immorality items formed another factor (eigenvalue = 7.78; 43% of the variance explained), while the unintelligence items formed the third factor (eigenvalue = 2.86; 16% of the variance explained). See Supplemental Table S33 for item loadings.

We then tested whether the dehumanization factor uniquely mediated reductions in war crime support with another parallel mediation analysis. We extracted the scores for each of the three factors and entered them as parallel mediators in a model with the experimental condition indicator (0 = control, 1 = intervention) as the predictor and war crime support as the outcome. We also compared the strength of the dehumanization factor's indirect effect against each of the other factors as before.

The dehumanization factor uniquely mediated reductions in war crime support, $\beta_{indirect} = -.33$ [−.42, −.24], $SE = .04$. The unintelligence factor was also a unique mediator, and there was no significant indirect effect through the factor comprising the other dislike items (see Supplemental Figure S41 for a path model). Notably, the dehumanization factor was a stronger mediator than the dislike factors (vs. unintelligence: $\beta_{indirect} = -.30$ [−.40, −.22], $SE = .05$; vs. affect-emotions-immorality: $\beta_{indirect} = -.29$ [−.41, −.17], $SE = .06$).

Discussion

We isolated dehumanization's role in promoting support for violence with an experimental intervention. Dehumanization uniquely mediated the intervention's effect on support for violence, and did so to a greater extent than all measures of dislike. This effect was conceptually replicated through a factor analysis finding the dehumanization items formed a distinct factor, and this dehumanization factor mediated a greater reduction in support for violence than the dislike factors. Although statistical mediation cannot definitively establish a specific temporal sequence, these results strongly support the notion that dehumanization promotes support for violence.

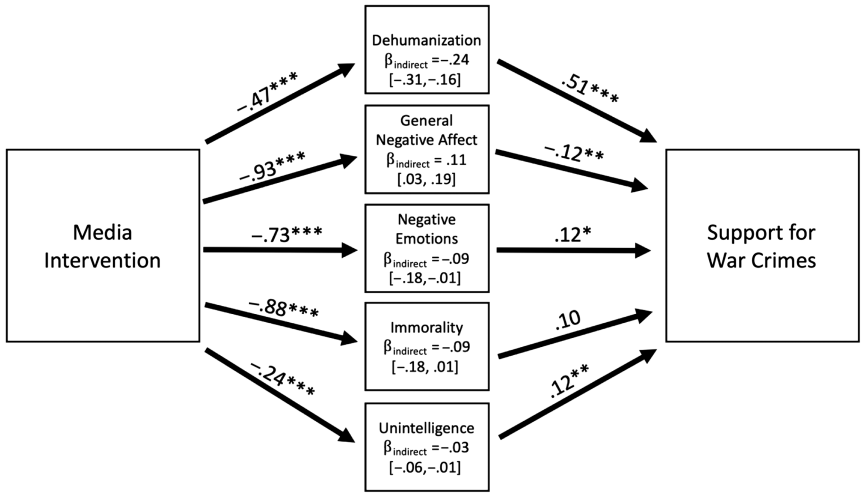
General Discussion

To effectively address support for intergroup violence, we must understand the psychology promoting it (Rai et al., 2017). Dehumanization is widely considered one such promoter, informing extensive theory, discourse, and policy on intergroup violence

[19] This effect, following brief exposure to the soldiers' moral agency and remorse, suggests how fragile dehumanizing abstractions can be in the face of actual experience and suffering (see Lang, 2010, pp. 232–235). We thank an anonymous reviewer for this insight.

Figure 5

Indirect Effects of the Intervention on Reduced War Crime Support, Mediated by Dehumanization and Dislike



Note. Mediation was performed with 5,000 bootstrapped resamples. Total effect: β = −.33 [−.44, −.23], *SE* = .05. Direct effect: β = −.06, p = .369. Values reflect standardized β coefficients. *SE* = standard error.
* p = .017. ** p < .01. *** p < .001.

(Kelman, 1973; Stanton, 2023; United Nations, 2014). However, research implicating dehumanization in support for violence has failed to account for the intense dislike that covaries with it, raising concerns that dehumanization's explanatory power is much more restricted than widely assumed (Lang, 2020; Manne, 2016; Over, 2021; Rai et al., 2017). Here, we demonstrated that dehumanization is both distinct from dislike and robustly linked to support for violence through a meta-analysis of the existing literature. We then established the generalizability of this effect across four continents and its robustness by accounting for the more intense dislike that is potentially confounded with dehumanization. Notably, in these studies, substantial proportions of respondents literally believed the target group was less than human, and these literal dehumanizers were especially supportive of violence against the target group. Finally, we isolated dehumanization's unique role in promoting support for violence with an experimental intervention. Collectively, these results illustrate dehumanization's uniquely powerful impact on support for intergroup violence.

Dehumanization had a particularly powerful impact on support for extreme violence. For instance, our meta-analysis found dehumanization to have a numerically stronger effect on support for more extreme violence, while our cross-cultural and experimental studies found it to strongly predict support for war crimes and genocide—often more strongly than dislike. Of course, this does not imply that dislike is irrelevant to support for extreme violence—some dislike measures explained unique variance.[20] Moreover, although we modeled dehumanization and dislike as independent predictors, it is possible that they interact to foment particularly high support for violence (though we did not find consistent evidence for this; see "Moderation Analyses" section in the Supplemental Material section titled "Supplemental Material for the General Discussion").

In considering the implications of these findings for debates about dehumanization's role in violence, it is worth comparing our conceptualization of dehumanization with those of scholars who question its explanatory power. This is because dehumanization has been conceptualized in a variety of ways, and although they share a conceptual core, different varieties of dehumanization may have distinct consequences (Landry & Seli, 2024). Here, we conceptualized dehumanization as the explicit and blatant denial of a target's humanity (Kteily & Landry, 2022, p. 227) and our results support extensive theory and research finding this variety of dehumanization promotes violence (e.g., Kelman, 1973; Kteily & Bruneau, 2017). However, another variety of dehumanization consists of a subtler process of overlooking another's mental capacities (i.e., *mind denial*; Waytz & Schroeder, 2014; Waytz et al., 2010). Scholars who question dehumanization's role in violence often adopt this conceptualization, noting that perpetrators of violence often recognize their victims' mind (e.g., their capacity to understand the meaning behind their suffering; Lang, 2010; Manne, 2016; Over, 2021; Rai et al., 2017). Therefore, much debate concerning dehumanization's role in violence seems to arise because scholars use the same term for distinct phenomena—with those referring to explicit, blatant dehumanization concluding it plays a crucial role and those referring to mind denial concluding it is of limited relevance. To avoid overgeneralized conclusions and unnecessary confusion going forward, we enjoin scholars to clearly articulate how they conceptualize dehumanization in their research and theorizing (see Landry & Seli, 2024).

[20] Relatedly, other psychological variables not considered here may also promote support for violence (Jahnke et al., 2022; Wolfowicz et al., 2021).

Limitations and Future Directions

One disadvantage to conceptualizing dehumanization as the explicit and blatant denial of a target's humanity is that this describes the output of psychological processes, not the processes themselves (Rai et al., 2018). Thus, it is imperative to ask: *Why* do people deny others' humanity? A related question concerns what distinguishes "literal" from "metaphorical" dehumanization—when does the denial of another's humanity reflect a genuine conviction they are less than human, and when is it "just talk" (Smith, 2021a)? In our cross-cultural studies, we sought insight into these questions by asking participants to elaborate on their reasons for dehumanizing the target group (either literally or metaphorically) in an open-ended text response. Using large language models and psycholinguistic dictionaries (Boyd et al., 2022; OpenAI, 2024), we identified several reasons why literal dehumanizers denied the target group's humanity. Many of these reasons accord with seminal theories of dehumanization, including perceptions that the target is evil, lacks "uniquely human" capacities for self-restraint and rationality, or lacks emotional capacities essential to "human nature" (Haslam, 2006; Phillips, 2022; Schwartz & Struch, 1989). We also identified features of literal dehumanizers' responses that distinguished them from those of metaphorical dehumanizers. For instance, literal dehumanizers more often described the target group as inherently depraved and expressed more words related to impurity, consistent with notions that dehumanization is predicated on psychological essentialism and moral disgust (Landry et al., 2022; Phillips, 2022; Smith, 2021b). See "Linguistic Analyses" section in the Supplemental Material for detailed results. These exploratory insights should inspire further study of the processes underlying dehumanization and what makes it go beyond mere metaphor.

A related future direction is identifying how dehumanization promotes violence. One hypothesis is that dehumanization facilitates violence by rendering its target unworthy of moral consideration (e.g., Bandura et al., 1975; Kelman, 1973). Upon this "moral disengagement" hypothesis, dehumanization makes violence easier but does not directly motivate it. An alternative hypothesis is that dehumanization does directly motivate violence by rendering its target inherently depraved or an implacable threat (the "moral motivation" hypothesis; e.g., Bar-Tal, 1989; Smith, 2021b). These hypotheses are not mutually exclusive and may explain how different varieties of dehumanization (e.g., mind denial vs. explicit, blatant) promote different forms of violence (e.g., instrumental vs. moral; see Rai et al., 2017). Understanding how dehumanization promotes violence is essential to short-circuit the process(es).

Future research should also identify moderators that dilute dehumanization's impact. For instance, in our cross-cultural studies, dehumanization showed a weaker effect among Hindus than in other samples (see Figure 3), perhaps due to sociocultural factors (e.g., the hierarchical caste system, which reifies groups' intrinsic superiority or inferiority; see Dutt, 2024). Indeed, as cultural understandings of "humanity" vary widely across time and place (Hubner, 2022), dehumanization's impact is likely subject to important cultural variation. Identifying these sociocultural moderators is a rich future research agenda (see Landry & Fincher, 2024).

Perhaps the most pressing future direction concerns psychological interventions to reduce dehumanization. Although we did so with a media intervention, participants were only exposed to this intervention because we paid them to engage in an opt-in study. Given desires to maintain a consistent worldview (Kunda, 1990), it is questionable whether those who firmly believe a target is subhuman would be motivated to engage with this humanizing (i.e., disconfirming) content in the "real world," absent such monetary incentives. Thus, researchers should focus on developing scalable methods for delivering dehumanization interventions to the populations that need them most (see Landry & Halperin, 2025).

Conclusion

Dehumanization is distinct from dislike, often intended literally, and has an especially powerful impact on support for intergroup violence. This should inspire a united effort to better understand and address dehumanization. Scholars should investigate how it arises and promotes violence, as well as its sociocultural moderators and scalable ways to deliver interventions, while practitioners should harness these insights to mitigate dehumanization's corrosive impact.

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