The United States and other Western countries are seeing massive backlash in response to a perceived influx of immigrants, particularly those who are non-White. One driving force of this backlash is the characterization of immigrants as criminals (Waters & Kasinitz, 2015). These characterizations and stories—what we call the criminal narrative—represent a stark contrast to findings indicating either no relationship or a small negative relationship between immigration and crime rates (Ousey & Kubrin, 2018).

Here, we tested whether the criminal narrative, relative to other types of narratives, may be contributing to this immigration backlash, whether it does so by altering the structure of individuals’ latent cognitive representations of specific immigrant groups as well as immigrants as a whole, and whether egalitarian ideology buffers individuals against these effects.

How Does the Criminal Narrative Affect Immigrant Cognitive Representations Relative to Other Types of Narratives?

By cognitive representation, we mean the relational structure of relevant traits, dimensions, and social groups that make up the construct of “immigrants” (Fiske & Dyer, 1985). Though claims of relatively greater...
criminality among some immigrant groups are statistically unfounded (Lee & Martinez, 2009; Light, Miller, & Kelly, 2017), these claims may nevertheless alter the structure of the cognitive representation of immigrants as a whole—for example, cleaving immigrants into “good” and “bad” subgroups, or more specifically, “White” and “non-White” subgroups (Flores & Schachter, 2018). Racialization of immigrants—for example, the contemporary ascription of Whiteness (or non-Whiteness) to different immigrant groups—matters because it leverages race-related stereotypes to reinforce subgrouping of “good” versus “bad” kinds of immigrants (Brown, 2013). For our purposes, a psychological marker of immigrant racialization would correspond to a latent structure organized by immigrants’ ascribed racial categories—White versus non-White—as opposed to their nationality, their self-identified ethnicity, or a single superordinate immigrant category.

At the time of data collection, these criminal characterizations were already widespread (e.g., see MacGuill, 2018). If participants’ representations are racialized prior to their beginning the experiment, then another way to test whether narratives can alter them is to examine the opposing effect of more positive narratives, such as the achievement narrative (Moffitt, Nardon, & Zhang, 2020; cf. Esses, Dovidio, Jackson, & Armstrong, 2001). From a representation-structure perspective, an achievement narrative of this sort may counteract subgrouping effects by making all immigrants, irrespective of nation of origin, more similar to one another, because positive stimuli tend to be rated and represented more similarly than negative stimuli (Alves, Koch, & Unkelbach, 2017). To the extent that all nationalities are perceived similarly to one another, they should be less subject to differential treatment on the basis of their possible subgroups.

**Does Egalitarian Ideology Render People Less Susceptible to the Influence of Criminal Narratives?**

Ideologies that capture people’s preferences for how society should be structured, such as social-dominance orientation and system justification, should moderate individuals’ susceptibility to narrative influence (Ledgerwood, Mandisodza, Jost, & Pohl, 2011), potentially buffering more egalitarian individuals against the influence of negative narratives. For example, individuals who report greater endorsement of the social status quo—those with higher system-justification scores—exhibit higher stereotypic differentiation of high- and low-status groups; they see groups as more different from one another (Jost, Kivetz, Rubini, Guermandi, & Mosso, 2005). Extrapolating to our investigation, we can infer that individuals with low system-justification scores should be less likely to exhibit differentiated, racialized immigrant representations. However, this tendency may be undermined by the criminal narrative in particular because crime is perceived more widely as a threat (compared with, e.g., symbolic threats such as introducing new languages or cultural practices). We measure individual differences in these ideologies to test whether and to what extent they moderate individuals’ representations as a function of the narrative context.

**Focusing on the Structure of Cognitive Representations**

Here, we applied a novel analytic technique to extract participants’ latent cognitive representations of these immigrant groups and their members. The first reason for this approach was pragmatic—the organization of cognitive representations can predict individuals’ policy preferences. For example, the kind of social target that is most accessible when “welfare recipient” is activated (e.g., a lazy vs. an oppressed individual) predicts weeks later whether people support the continuation of welfare services (Gilens, 1996; Lord, Desforges, Fein, Pugh, & Lepper, 1994). Similarly, more differentiated representations should be associated with less support for
immigrants and immigration because people will not be accessing a single distribution of immigrants but rather one of two or more subgroups. Greater accessibility of negative relative to positive exemplars (Rozin & Royzman, 2001) makes it more likely that people will substitute “bad” immigrants for immigrants in general when considering their policy preferences (Blinder, 2015).

The second set of reasons to focus on the structure of cognitive representations is methodological. Although past research has relied on evaluations of social groups averaged across samples (e.g., average ratings of stereotypic traits associated with each nationality), we employed representational-similarity analyses to measure latent cognitive representations in order to address three significant limitations. First is the challenge of making inferences about within-individual psychological representations from group-averaged data. Second is the problem of shifting standards even within individuals; raters may use the same response option despite having different underlying subjective evaluations (e.g., industriousness for a Mexican may not be the same as industriousness for a German; Biernat & Manis, 1994). Third, similarity-based indices allow for more flexible and sensitive detection of representational subgrouping, and this aids in accounting for shifting-standards effects because they index patterns of trait ratings across target pairs while being indifferent to absolute values of the targets’ ratings (see Sayans-Jiménez, Harreveld, Dalege, & Rojas Tejada, 2019, for a similar argument adopting a network approach).

Consequently, we used representational-similarity analysis based on participants’ trait ratings of immigrants—correlation matrices that contain patterns of similarity and dissimilarity between stimuli (Kriegeskorte, Mur, & Bandettini, 2008)—to infer participants’ latent representations from targets’ arrangement in a “trait space.” This allowed us to characterize each participant’s mental mapping of immigrants as a whole: a representational-similarity measure ranging from highly homogeneous (the correlations across traits are high for most if not all pairs of immigrants) to highly differentiated (the correlations across traits are high for some pairs of immigrants and low for others, indicating multiple clusters). Because it is a data-driven technique based on a large number of pairwise correlations, it allowed us to map how different narratives affect the organization of immigrant representations in individuals’ minds (e.g., Are the four nationalities represented as four distinct clusters? Two racialized clusters?).

The Current Research

Across two experiments (total \( N = 1,054 \) U.S. residents) and one study (\( N = 218 \)), we manipulated participants’ exposure to achievement, criminal, or struggle-oriented descriptions of immigrants in order to assess how they impacted participants’ latent representations of four politically salient immigrant groups—Germans, Russians, Syrians, and Mexicans. We included struggle narratives as a control condition to isolate the effect of criminal narratives above and beyond being negatively valenced. In Experiment 1, we created separate correlational matrices from the trait ratings of individual immigrants and nationality groups to test the following hypotheses: (a) that baseline representations of different immigrant groups are already racialized; (b) that criminal narratives differentiate representations of individual immigrants from those groups more than other types of narratives do, specifically along a racial axis; (c) that more differentiated representations predict reduced support for immigrants and immigration; and (d) that egalitarian ideology is associated with more homogeneous representations, except for the criminal condition. Experiment 2 replicated Experiment 1 with a larger sample and included a second rating of nationality groups after exposure to the individuals’ narratives to test whether this exposure also updated participants’ representations of immigrants’ respective nationality groups. Finally, Study 3 tested whether our preceding racialization results were driven by perceived race or a plausible alternative: status.1

Method

We report all the measures we collected across the two experiments and one study. All materials, source data, data analysis code, and output for all experiments (including pilot data for Experiment 1) are available on OSF (https://osf.io/2xgyf). The preregistration of Experiment 2 can be viewed at https://osf.io/f4u92, and the preregistration of Study 3 can be viewed at https://osf.io/kub2d. Both experiments and Study 3 were approved by the Harvard University Committee on the Use of Human Subjects. All participants provided informed consent before beginning the task. See the Supplemental Material available online for additional participant demographic information.

Participants

Experiment 1. We had no previous work on which to base this power analysis, but we knew that 100 participants per condition was necessary to detect an effect size (\( f \)) of .18 (halfway between a small and medium effect: .1 vs. .25) with 80% power in a three-condition, between-subjects analysis-of-variance framework. A convenience sample of 300 adult U.S. residents was recruited via Amazon Mechanical Turk (100 per narrative condition) in August 2017. Two participants failed attention checks and were
thus excluded from analysis, resulting in a final sample size of 298 (99 in the achievement condition, 99 in the criminal condition, and 100 in the struggle condition; 131 female; mean age = 34.3 years, SD = 10.2). For the representation-similarity analyses, another eight participants were excluded from the nation level (five in the achievement condition, three in the criminal condition) and seven from the individual immigrant-level analyses (three in the achievement condition, three in the criminal condition, one in the struggle condition) for lacking variance in their responses (i.e., they entered the same numerical ratings across all traits for a given target or provided a combination of responses that all averaged out to the same rating across traits).

**Experiment 2.** A convenience sample of 795 adult U.S. residents was recruited in June 2018 through Amazon Mechanical Turk (aiming for 260 per condition, the sample size at which small correlations stabilize; Schönbrodt & Perugini, 2013). Thirty-nine participants failed attention checks and were excluded from analysis, resulting in a final sample size of 756 (252 in the achievement condition, 251 in the criminal condition, and 253 in the struggle condition; 365 female; mean age = 37.2 years, SD = 18.2). For the representation-similarity analyses, 36 participants were excluded from the baseline nation-level analyses (12 in the achievement condition, 12 in the criminal condition, and 12 in the struggle condition), 48 from the postexposure nation-level analyses (14 in the achievement condition, 20 in the criminal condition, and 14 in the struggle condition), and 24 from the individual immigrant-level analyses (four in the achievement condition, fifteen in the criminal condition, and five in the struggle condition) for lacking variance in their responses (see above).

**Study 3.** We used the same target sample size as in Experiment 2. A convenience sample of 260 adult U.S. residents was recruited via Amazon Mechanical Turk in May 2019. Thirty-four were excluded because of failed attention checks, and eight were excluded from the individual immigrant-level analyses for lacking response variance, resulting in a final sample size of 218 (all in the criminal condition; gender, age, and ethnicity were not recorded for 13 participants because of a technical error; of the remaining participants, 97 were female; mean age = 37.1 years, SD = 11.9).

**Materials**

**Nationalities.** The nationalities of the immigrants portrayed in these stories were German, Russian, Mexican, and Syrian, groups chosen on the basis of their heterogeneity of quadrant positioning within the stereotype-content model (Fiske, Cuddy, Glick, & Xu, 2002) and their sociopolitical salience following the 2016 presidential election. During data collection for Experiment 1, in the late summer of 2017, Russia was featured in the news for U.S. election interference; Germany was emerging as a leading progressive world power, while people were drawing connections between Nazism and alt-right movements in the United States; the construction of a wall along the U.S.–Mexico border was part of the national conversation; and Syrian refugees were fleeing the conflict in Syria, sparking discussions about national sovereignty, threats, and humanitarian responsibility. The political context during data collection for Experiment 2 included family detention and separation in immigration centers near the Mexican border, a national debate on Russian interference in elections and Trump–Putin relations cleaved along ideological lines, the bombing of Syria by the U.S. military, and Germany’s declaration to distance itself politically from the United States. Data collection for Study 3 was conducted in May 2019 and included the same four nationalities plus Vietnam and Japan. These six countries along with China, India, Pakistan, Myanmar, the Philippines, and Korea were pilot tested (N = 180) and rated on five dimensions: Whiteness, documentation or legality, wealth, familiarity, and media exposure. Japan was perceived as a higher-status country and Vietnam as a lower-status country, but both were perceived as less White than Germany and Russia. Note that these data confirmed that Syrians and Mexicans were also perceived as less White than Germans and Russians (see Fig. S1 in the Supplemental Material; see also Chaney, Sanchez, & Saud, 2020). Including these additional groups allowed us to disambiguate whether criminal narratives organized representations by race or by status (e.g., wealth), which were confounded within the original four countries.

**Stimulus construction.** Thirty-six short stories (approximately two sentences each, 12 per narrative condition) were constructed in the third person about immigrants in the United States. All stories used male pronouns (he, his, him). The achievement stories were modeled loosely off scraped tweets marked with the hashtag “#immigrantexcellence” (e.g., “He supported himself and his brother through school. He is now graduating with a PhD”). The criminal stories were inspired by small-scale transgressions listed in a U.S. Immigration and Customs Enforcement (2017) report. These stories structurally mirrored the achievement narratives (e.g., “He owns a convenience store and sells liquor without a license”). The struggle stories were also modeled from the #immigrantexcellence tweets, but their achievement-related content was replaced with social, financial, and housing struggle (e.g., “He came to the U.S. to study, but dropped out to send money home and can only find temporary employment”).
The final set of stories was chosen from a larger set ($N = 60$), which we pilot tested with a separate sample. For the pilot study, 140 participants rated the valance of the stories and how believable, moral, and related to success they were on a scale from 1 to 9. To generate the final set, we prioritized the most believable stories and then removed those that were outliers on the other dimensions. Critically, the similarity between stories along these dimensions (before being paired with specific immigrants) was not significantly different across conditions, ensuring that representational-similarity differences among narrative conditions in the experiments were not driven by story similarity.

On each trial, one story was randomly paired with one of 12 individual immigrants (three per nationality). The names of the individuals were chosen from the most popular male names in each country (Mexico: Jose, Carlos, and Fernando; Germany: Klaus, Hans, and Kurt; Syria: Ahmad, Abdallah, and Mohammad; Russia: Nikoláy, Boris, and Andréy). In Study 3, we included only criminal stories. We kept the same number of immigrants (12) and criminal narratives, but each nationality was represented by two immigrants (Germany: Hans and Klaus; Russia: Nikoláy and Boris; Mexico: Jose and Carlos; Syria: Abdallah and Ahmad; Japan: Haruto and Riku; Vietnam: Bao and Phuon).

**Trait dimensions.** Nationality groups and individual immigrants were rated on a series of seven dimensions using Likert scales ranging from 1 (not at all) to 7 (extremely): competence, morality, sociability, Americanness, laziness, dangerousness, and competitiveness. We selected these traits because they represent the cardinal dimensions of social perception across a variety of theories and in the specific context of immigration (Devos & Banaji, 2005; Esses et al., 2001; Fiske et al., 2002; Landy, Piazza, & Goodwin, 2016; Wiggins, 1979). We provided participants with definitions for each trait based on previous work to minimize error around trait meaning.

**Experimental design.**

Both Experiments 1 and 2 employed a mixed 3 (story content: excellence vs. criminality vs. struggle) × 4 (nationality: German vs. Russian vs. Mexican vs. Syrian) factorial design; story content was manipulated as a between-subjects variable, and nationality was manipulated as a within-subjects variable. In both cases, each participant was randomly assigned to one of the three story-content conditions and evaluated all four nationality groups and specific immigrant exemplars from those groups. Study 3 included only the criminal condition but six nationalities (German, Russian, Mexican, Syrian, Japanese, Vietnamese).

**Procedure.**

Participants were told they would be rating individuals and groups on a series of seven trait dimensions. Each of these dimensions was defined for participants in a glossary. Participants then completed a quiz in which they were asked to pair each dimension with its corresponding definition; we required a score of 100% before participants could continue. Participants were then asked to rate each of four nationality groups on the seven dimensions. For each nationality-group rating, they saw a German, Russian, Mexican, or Syrian flag, underneat which was a text label (e.g., “German Immigrants”). Nationality groups were presented in random order. Participants then read 12 narratives about male immigrants in the United States and rated the subject of each narrative on seven dimensions. We included only male targets because from the perspective of the theory of gendered prejudice (Sidanius, Hudson, Davis, & Bergh, 2018), men are more likely targets of intergroup discrimination than are women. This is bolstered by deportation statistics in the context of immigrants: Latino men are the most frequent targets of criminalizing rhetoric and the most deported group in the current immigration system (Golash-Boza & Hondagneu-Sotelo, 2013).

For each individual rating, participants saw one of the same flags from the group ratings, this time with a silhouette of a face and shoulders overlaid on top. Underneath this image was a text label (e.g., “Klaus immigrated from Germany”) followed by an achievement, criminal, or struggle story. Participants rated each individual immigrant story to which they were assigned on all seven trait dimensions twice across successive blocks of narratives. Note that individual narratives were randomly assigned to each immigrant (across participants) and that immigrants’ order of presentation was randomized across blocks. The random assignment of story to immigrant ensured that the stories could not be driving the similarity effects between immigrants (e.g., Jose was Story 1 for one participant and Story 12 for another). All seven traits were rated separately in succession per target, but the trait order was also randomized. Overall, participants completed 196 rating trials (4 nationality groups × 7 traits plus 12 immigrants × 7 traits × 2 blocks). Participants then completed an attention check that asked, “What percentage of the stories that you read were about immigrants?” Individuals reporting anything other than 100% were excluded from analysis.

In Experiment 1, participants completed two-item measures for social-dominance orientation, interitem correlation $r(296) = .68$ (Ho et al., 2015); system justification, interitem correlation $r(296) = .60$ (Kay & Jost,
The procedure for Study 3 was identical to that of Experiment 1 with two major differences. First, participants completed a second round of group nationality ratings following their ratings of the 12 individual immigrant narratives. Second, participants completed different questionnaire items at the end of the main task: the full eight-item measure of system justification (Cronbach’s $\alpha = .90$), with Likert scales ranging from 1 (strongly disagree) to 9 (strongly agree), and the revised policy questions (Ho et al., 2015).

The focus of our analyses was to calculate the pairwise similarity between targets’ rating patterns across all seven traits at both the nation level and the individual immigrant level. In other words, each immigrant and immigrant group was conceptualized as represented by a vector of trait ratings such that the relations among all these trait vector representations constitutes the cognitive representation of immigrants (Fig. 1). To this end, we made use of representational similarity matrices that contain all pairwise similarities, a similarity measure to quantify whether immigrant representations were overall differentiated or homogenized, hierarchical clusters and multidimensional scaling to visualize the structure, racial-matrix similarity to examine the extent to which immigrant representations correlated with prespecified racially differentiated matrices, and regression models to relate representations to system justification. We also assessed the impact of narratives on policy endorsement.

**Representational matrices.** Representations were computed as the pairwise Spearman rank correlations between every individual immigrant or nationality group on the seven social traits. The matrix for the individual immigrants was larger ($12 \times 12$) than the matrix for the nationality

### Analysis

The procedure for Experiment 2 was almost identical to that used in Experiment 1 with two major differences. First, participants completed a second round of group nationality ratings following their ratings of the 12 individual immigrant narratives. Second, participants completed different questionnaire items at the end of the main task: the full eight-item measure of system justification (Cronbach’s $\alpha = .90$), with Likert scales ranging from 1 (strongly disagree) to 9 (strongly agree), and the revised policy questions (Ho et al., 2015).

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groups (4 × 4). Because the individual narratives were rated twice, we averaged the two blocks per trait, per immigrant, per participant and used those averages to calculate the correlations. As an example of the meaning of these correlations, they track the similarity between two patterns of trait ratings across target pairs while being indifferent to absolute values of the target’s scores.

Participants’ test-retest reliability was calculated at the level of the representational matrices across repetitions for Experiment 1 (achievement: \( r = .27, 95\% \) confidence interval \([CI] = [.17, .37]\); criminal: \( r = .47, 95\% \) CI \([=.39, .55]\); struggle: \( r = .34, 95\% \) CI \([=.28, .40]\)) and Experiment 2 (achievement: \( r = .26, 95\% \) CI \([=.22, .30]\); criminal: \( r = .50, 95\% \) CI \([=.46, .55]\); struggle: \( r = .38, 95\% \) CI \([=.34, .42]\)). Although there is a dearth of literature on the reliability of representational matrices made from trait ratings, our measures are more reliable than those using neural representations (Walther et al., 2016).

**Similarity measures.** The measure of similarity was simply the average Fisher’s \( z \)-transformed correlation of the lower triangle of a representational matrix. Lower or higher \( z \) scores would indicate that the 12 immigrants (interimmigrant similarity) or four nations (intergroup similarity) or immigrants and their nation (group–immigrant similarity) are less or more similar to each other on the whole, respectively. In other words, higher scores are indicative of a more homogenized representational space, and lower scores suggest more differentiated representations. Correlation values between \( .99 \) and 1 were changed to correlations of \( .99 \) for three reasons. The first is that the Fisher’s \( z \) transformation of perfect correlations is an infinite value. The second is that the \( z \) score of correlations greater than \( .99 \) can increase dramatically, producing many outliers. For example, the difference between a correlation of \( .999 \) and \( .99999999999999999 \) is a \( z \)-score difference of around 4 to 18. Lastly, capping correlations at \( .99 \) or \( −.99 \) (a \( z \) score of \( −2.6 \)) addresses the outlier problem, statistically retains the fact that these are highly correlated targets, and provides a more conservative test (because it pulls extremely high \( z \) scores downward).

**Hierarchical clusters.** For this analysis, nationality-group correlation matrices per condition were constructed from cell-by-cell averaging across individual participants’ correlation matrices of the nationality groups. For example, the average correlation between German immigrants and Syrian immigrants would be computed by a Fisher’s \( z \) transformation of the corresponding correlation in each participant’s matrix, averaging these \( z \) scores across participants, and converting the average \( z \) score back into a correlation. This process was repeated for every group pair. The averaged correlation matrices were converted to dissimilarity matrices by subtracting each correlation from 1 (e.g., convert \( r \) into \( 1−r \)). Last, these dissimilarity scores were submitted to a bootstrapping hierarchical-clustering procedure to obtain \( p \) values using the **pcaclust** package (Suzuki, Terada, & Shimodaira, 2019) and visualized using both the base **stats** package in R (R Core Team, 2014) and the ggdendro package (de Vries & Ripley, 2020). This hierarchical-clustering method begins by calculating all the pairwise distances among nations, merging the closest pairs, recomputing the distance between the new clusters and the old ones, storing these values in a new distance matrix, and then repeating this process until all the clusters merge into one (the rightmost side of each dendrogram). The approximately unbiased \( p \) values we report were calculated through 10,000 multiscale bootstrapped samples in which each branch of the dendrogram was given an approximately unbiased \( p \) value ranging from 0 to 1. Branches with approximately unbiased \( p \) values higher than .95 are considered to be strongly supported by the data (Suzuki et al., 2019).

**Multidimensional scaling.** Much like the hierarchical clusters, multidimensional scaling also visualizes the similarity between immigrants, but as points in a two-dimensional plot. Average correlation matrices between individual immigrants were constructed from cell-by-cell averaging across participants’ immigrant matrices. In other words, the average correlation between Hans and Jose was computed by taking the average of the Fisher-\( z \)-transformed Hans-Jose correlations from each participant. This average \( z \) score was then reconverted back into a correlation value. This process was repeated for every immigrant pair. We then applied multidimensional scaling independently to each of the averaged correlation matrices in each narrative condition. Results were rotated to a common orientation via Procrustes transformation and rescaled to appropriately reflect the overall similarity between immigrants in each condition. In our case, the two axes are not important; the important aspect is the distance between specific immigrants.

**Racial- and status-matrix similarity.** In Experiments 1 and 2, two dissimilarity matrices were constructed for the individual immigrants and the nationality groups. Target pairs that could be considered to share a racialized identity (e.g., Germans and Russians or Mexicans and Syrians) were given a 0, which in a dissimilarity matrix means there is no difference between them (i.e., \( 1−r \); see Fig. S2 in the Supplemental Material). Pairings that crossed racial boundaries were given a score of 1, which would represent maximum difference. These matrices represent an a priori model of what the data would look like if immigrant representations were racialized such that White immigrants are
more similar to themselves and non-White immigrants are similar to themselves, but White and non-White immigrants are different from each other. Dissimilarity matrices were also constructed from the data using the same averaging approach as the matrices for the multidimensional scaling. These group-based dissimilarity matrices were computed for each narrative condition and were correlated to the hypothesis matrices to obtain a measure of whether different narratives create or remove racial structures in immigrant representations, on average. High correlations indicate a shared racialized representational structure. Correlations were compared using the cocor package (Version 1.1.3) in R to obtain CIs of the difference and p values (Diedenhofen & Musch, 2015). Note that in all cases we report Pearson correlations, but Spearman rank correlations generated very similar results (i.e., no change in which correlations were or were not significant).

For Study 3, two racial matrices were constructed for the individual immigrants: a two-cluster racial matrix that distinguished White (Germany and Russia) from non-White (Japan, Vietnam, Mexico, Syria) and a three-cluster racial matrix in which Japan and Vietnam, Syria and Mexico, or Russia and Germany were clustered together. A status-based matrix clustered Japan, Germany, and Russia or Syria, Mexico, and Vietnam. We then computed Bayesian information criterions (BICs) for each matrix to compare the best-fitting models.

Regression models. We ran a combination of ordinary least squares (OLS) regression analyses and linear mixed-effect (LME) regression models for Experiments 1 and 2. The first OLS analysis tested whether the differentiation or homogenization of immigrants differed across narratives and levels of system justification. These regressions predicted each participant’s average interimmigrant similarity (Fisher’s z) from the interaction of narrative type and system justification. The other OLS analysis applied only to Experiment 2, as it examined whether nationality groups’ representations were updated from before to after the narratives. Here, difference scores were computed per participant from the post- and preaverage intergroup similarities of the nationality groups. These difference scores were then predicted by the interaction between narrative type and system justification. The fourth OLS analysis tested policy preferences, which were predicted from the same interaction. Policy preferences were also predicted by the interaction between narrative type and average interimmigrant similarity.

For the LME analyses, we examined the generalization of exemplars to groups by regressing the nationality group–individual immigrant similarity on the interaction between narrative type and a time variable coding for before and after narrative exposure. Here, nationality was treated as a control, and time and nationality were treated as random slopes of participants to account for the repeated measures. The last LME analysis assessed average trait ratings by regressing each of the seven trait ratings by the interaction between narrative condition and nationality separately for the immigrant-group ratings and ratings of the individual immigrants. The random-effects structure to account for data dependencies differed between the group and individual-level models. For the group-level ratings, participant intercepts were allowed to vary, because at baseline participants rated each nationality group a single time per trait. For the individual story ratings, nationality was a random slope per participant, because they rated multiple individuals from multiple nations. Stimulus (individual-immigrant) intercepts were allowed to vary in addition to intercepts of the interaction between participants and stimuli to account for the two blocks of repeated ratings per individual immigrant. Regressions were conducted using R (R Core Team, 2014). Multiple comparisons were computed using the lsmeans package (Version 2.26.3; Lenth, 2016) and corrected for false-discovery rate using the Benjamini-Hochberg correction. Degrees of freedom were calculated using Satterthwaite approximation for the mixed-effects regressions. Effect sizes (ds) were calculated by dividing the regression βs by the standard deviation of the model’s residuals. For all means, slopes, differences, and effect sizes, 95% CIs are reported. All analyses were two-tailed.

Results

Baseline immigrant representations are racialized

Figure 2 shows averaged baseline nationality ratings prior to any exposure to narratives (see also Table S1 in the Supplemental Material). Prior to participants reading any narratives, hierarchical clusters of the dissimilarity matrices of nationality groups in both Experiments 1 and 2 exhibited racialized organization (see Fig. S3 in the Supplemental Material). Specifically, Germans and Russians were represented more similarly to one another than either group was to Syrians or Mexicans (cluster approximately unbiased ps = 1); likewise, Syrians and Mexicans were represented more similarly to one another than either group was to Germans or Russians (cluster approximately unbiased ps > .97). These analyses indicate that people’s priors tend to reflect race-based organization of immigrants groups.

Average trait ratings by narrative condition and by country

We regressed each trait, respectively, onto immigrant nationality, narrative condition, and their interaction.
Across both Experiments 1 and 2, the main effect of condition was always significant, nationality was significant only for the American and sociable traits (and the dangerous trait; \( p = .05 \) in Experiment 2), and their interaction was never significant. (See Fig. 2 for Experiment 1 results; Fig. S4 in the Supplemental Material for Experiment 2 results; Table S2 in the Supplemental Material for descriptive statistics of immigrant ratings by nationality, narrative condition, traits, and experiment; and Tables S3a–S3n in the Supplemental Material for regression results.)

Comparing across narrative conditions in Experiment 1 (see Table S3o in the Supplemental Material), we found that achievement stories generated significantly higher ratings than the criminal and struggle stories for the American, competent, moral, and sociable traits. Achievement stories also generated significantly higher ratings for the competitive trait than the struggle stories did (but not the criminal stories), and achievement stories generated lower ratings for the dangerous and lazy traits than did both the struggle and narrative stories. Criminal and struggle stories generated significantly different ratings across all traits except sociability. The results for Experiment 2 exhibited an identical pattern except that this time, criminal and struggle stories differed across all traits, including sociability (see Table S3p in the Supplemental Material). Overall, these results effectively amount to narrative manipulation checks, but it is noteworthy that in no case did we observe an interaction between narrative condition and target nationality.

In short, the stories drove ratings on most traits to be very similar for all nations on average, but critically, different respondents could be driving the means across trait ratings and countries. Assessing immigrant similarity on the basis of sample means does not take into account how immigrants are represented within individuals: that requires placing immigrant similarity within respondents as the primary unit of analysis. We now turn to a series of similarity analyses to address this issue.

**Different narratives homogenize or differentiate representations of individual immigrants**

Figure 3a represents how the different immigrants clustered as a function of their nation of origin and narrative condition in Experiment 1. Immigrants embedded in achievement narratives were represented most similarly to one another, whereas immigrants embedded in criminal narratives were represented least similarly to one another.

In order to conduct inferential tests, we quantified interimmigrant similarity as the Fisher’s \( z \) transformation of the correlations measuring the similarity of individual immigrant representations (see the Method section for analysis details). In Experiment 1, we found that interimmigrant similarity was predicted by narrative type, \( F(2, 285) = 81.88, p < .0001 \), and participant system-justification scores, \( F(1, 285) = 5.76, p = .017 \); however, there was no significant interaction between them, \( F(2, 285) = 2.56, p = .079 \) (Fig. 3b, top row). Achievement narratives generated more homogenization (mean \( z = 1.58, 95\% CI = [1.48, 1.68] \)) than struggle narratives (mean \( z = 0.92, 95\% CI = [0.83, 1.03] \), difference \( = 0.65, 95\% CI = [0.48, 0.83] \), \( d = 1.27, 95\% CI = [0.97, 1.57] \), \( \kappa(285) = 8.88, p < .0001 \), and criminal narratives (mean \( z = 0.67, 95\% CI = [0.57, 0.77] \), difference \( = 0.91, 95\% CI = [0.73, 1.09] \), \( d = 1.77, 95\% CI = [1.5, 2.1] \), \( \kappa(285) = 12.26, p < .0001 \). Criminal narratives generated more differentiation than struggle narratives (mean \( z = 0.3 \).
Struggle
Criminal

Moderate the impact of achievement versus criminal $d = -0.49$, 95% CI = $[-0.79, -0.21]$, $t(285) = -3.49$, $p = .0005$. Individuals with higher system-justification scores were also associated with more differentiated representations across immigrant groups, $b = -0.04$, 95% CI = $[-0.08, -0.006]$, $t(285) = -2.29$, $p = .022$. In short, both the achievement narratives, $b = -0.07$, 95% CI = $[-0.14, -0.008]$, $t(285) = -2.20$, $p = .029$, and struggle narratives, $b = -0.078$, 95% CI = $[-0.14, -0.014]$, $t(285) = -2.39$, $p = .017$, led to more differentiated representations among participants with higher system-justification scores (Fig. 3b, top row). Critically, this was not the case for criminal narratives, which generated the same level of differentiation irrespective of system-justification scores, $b = 0.018$, 95% CI = $[-0.05, 0.09]$, $t(285) = 0.53$, $p = .595$; differences between criminal narratives and achievement and struggle narratives, respectively, $bs = 0.09$, 95% CI = $[-0.02, 0.21]$, $d_s = 0.18$, 95% CI = $[-0.01, 0.36]$, $p_s = .086$. Social-dominance orientation did not moderate the impact of achievement versus criminal stories on representations, so we focused on replicating the system-justification findings in Experiment 2.

Experiment 2 similarly resulted in a significant effect of narrative type, $F(2, 726) = 191.4$, $p < .0001$; system justiﬁcation, $F(1, 726) = 18.82$, $p < .0001$; and their interaction, $F(2, 726) = 15.81$, $p < .0001$, on interimmigrant similarity (Fig. 3b, bottom row). Achievement narratives (mean $z = 1.63$, 95% CI = $[1.57, 1.69]$) homogenized immigrants more than struggle narratives (mean $z = 1.01$, 95% CI = $[0.95, 1.08]$, difference = 0.62, 95% CI = $[0.51, 0.73]$), $d = 1.21$, 95% CI = $[1.1, 1.4]$, $t(726) = 15.5$, $p < .0001$, and criminal narratives (mean $z = 0.74$, 95% CI = $[0.67, 0.80]$, difference = 0.89, 95% CI = $[0.78, 1.00]$), $d = 1.7$, 95% CI = $[1.5, 1.9]$, $t(726) = 19.13$, $p < .0001$. Criminal narratives differentiated immigrants more than struggle narratives (mean $z$ difference = $-0.27$, 95% CI = $[-0.38, -0.16]$), $d = 0.53$, 95% CI = $[0.35, 0.72]$, $t(726) = -5.85$, $p < .0001$. Again, individuals scoring higher in system justification differentiated immigrants more, $b = -0.049$, 95% CI = $[-0.07, -0.03]$, $t(726) = -4.33$.
that immigrants are grouped by inferred race (i.e., White/non-White) when their representations are differentiated, and we did so by looking at how well the data correlated with an a priori racially differentiated matrix (see Fig. S2 in the Supplemental Material). As predicted, Experiment 1’s dissimilarity matrix of immigrants in the achievement condition showed a weak relationship to an a priori race-based matrix, $r(64) = -.02$, 95% CI = [-.26, .22], $p = .881$, whereas the criminal narratives, $r(64) = .32$, 95% CI = [.09, .52], $p = .009$, and the struggle narratives, $r(64) = .43$, 95% CI = [.21, .61], $p = .0003$, exhibited significantly stronger correlations with the race-based matrix, suggesting a more racialized representational structure in those conditions. The achievement correlation coefficient differed from the criminal correlation coefficient (difference = .34, 95% CI = [.002, .655], $z = 1.98$, $p = .048$) as well as from the struggle correlation coefficient (difference = .45, 95% CI = [.122, .749], $z = 2.69$, $p = .007$). There was minimal difference between the criminal and struggle correlation coefficients (difference = .11, 95% CI = [-.189, .405], $z = .719$, $p = .472$). The same pattern emerged in Experiment 2: Immigrants presented within criminal narratives, $r(64) = .33$, 95% CI = [.09, .53], $p = .006$, and struggle narratives, $r(64) = .39$, 95% CI = [.16, .57], $p = .001$, were organized in a manner that correlated with a race-based matrix, whereas immigrant representations in achievement narratives were not, $r(64) = -.03$, 95% CI = [-.27, .21], $p = .795$. Again, the achievement correlation coefficient differed significantly from the criminal correlation coefficient (difference = .37, 95% CI = [.027, .677], $z = 2.12$, $p = .034$) as well as from the struggle coefficient (difference = .42, 95% CI = [.085, .723], $z = 2.463$, $p = .014$), and there was no difference between the criminal and struggle correlation coefficients (difference = .05, 95% CI = [-.249, .354], $z = .342$, $p = .733$). (See Supplemental Results in the Supplemental Material for an exploratory analysis of which traits drove differentiation in the criminal and struggle narratives in Experiments 1 and 2.)

In Study 3, we sought to test whether status was a viable alternative explanation of this racialization pattern. We administered just the criminal condition with immigrants from the original four countries and added Japanese (perceived as high-status but non-White) and Vietnamese (perceived as low-status and also non-White) immigrants. If Japan clustered with Germany and Russia (all high status) and Vietnam clustered with Mexico and Syria (all low status), status organization would be a better explanation of our results. However, if Japan and Vietnam clustered with Mexico and Syria (a non-White cluster), or even with each other but not the other groups (an Asian cluster), that would support a race-based organization account. Although a White/

Narratives deracialize representations of individual immigrants

Next we sought to identify the axis along which differentiation occurred. Here, we tested our hypothesis

p < .0001. Critically, the narrative effect depended on an individual’s system-justification score. As in Experiment 1, the achievement narrative, $b = -.065$, 95% CI = [-.10, -.03], $t(726) = -3.32$, $p = .001$, and the struggle narrative, $b = .11$, 95% CI = [−.16, −.08], $t(726) = -6.01$, $p < .0001$, led to more differentiated representations for individuals with higher system-justification scores. Again, criminal narratives instead showed a similar level of differentiation across all levels of system justification, $b = .036$, 95% CI = [-.002, .07], $t(726) = 1.82$, $p = .069$, which was a marked difference from achievement narratives (difference: $b = -.10$, 95% CI = [-.17, -.03]), $d = .20$, 95% CI = [.09, .30], $t(726) = 3.63$, $p < .001$, and struggle narratives (difference: $b = -.15$, 95% CI = [-.22, -.09]), $d = .30$, 95% CI = [.19, .41], $t(726) = -5.54$, $p < .0001$.

Thus, achievement narratives homogenized immigrants, criminal narratives differentiated immigrants, and struggle narratives generated representations between achievement and criminal narratives. Interestingly, the differentiation of immigrants in the criminal condition matched the differentiation level of nationality groups in the baseline measure (i.e., Fisher’s $z = 8$; cf. Figs. 3b and 4b), suggesting that criminal narratives maintained baseline representations, whereas more change occurred in the achievement and struggle conditions.

Immigrant representations also depended on individual differences in system justification: Endorsement of the status quo was associated with more differentiated immigrant representations. The impact of achievement and struggle narratives also differed by levels of system justification—that is, participants with higher system-justification scores were resistant to the homogenizing effects of achievement narratives.

Most notable was that low system-justification scores did not buffer participants against the impact of criminal narratives. Specifically, criminal narratives even made the representations of participants with low system-justification scores look like those of participants with high system-justification scores. However, it should be noted that the achievement narratives elicited greater homogeneity relative to the other conditions, even for individuals high in system justification, indicating that these participants were still somewhat susceptible to effects of positive narratives. Experiment 2 exhibited a very similar pattern of results to Experiment 1, providing further evidence for the stated relationships among narratives, system justification, and immigrant representation.

Narratives deracialize representations of individual immigrants

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non-White racial matrix did not correlate with the empirical data, $\kappa(64) = .09$, 95% CI $= [-.15, .33]$, $p = .462$, neither did the status matrix, $\kappa(64) = .14$, 95% CI $= [-.10, .37]$, $p = .256$. Instead, a three-cluster racial matrix (i.e., Russia–Germany, Mexico–Syria, Japan–Vietnam, which was not preregistered) correlated most with the empirical data, $\kappa(64) = .22$, 95% CI $= [-.02, .44]$, $p = .080$, supporting a racialization interpretation. A comparison of the model fits confirmed that the three-cluster racial matrix (BIC $= -263.66$) provided the best fit to the data relative to the two-cluster racial matrix (BIC $= -261.04$) and the status matrix (BIC $= -261.82$).

Thus, the homogenizing effect of achievement narratives helped deracialize immigrant representations compared with baseline representations of nationality groups. However, criminal and struggle narratives maintained the racialized nationality organization at the individual immigrant level, confirming that to the extent that narratives differentiate immigrant representations, race is one driver of that difference.

**Individual immigrants update representation of nation groups**

Experiment 2 included a second round of evaluations of nationality groups after exposure to the narratives. To test whether immigrant exemplars updated the structure of their respective nationality representations, we examined the representational similarity between individual immigrants and their corresponding nationality groups both before and after narrative exposure. Individual immigrant–nationality similarity was greater after narrative exposure (mean $z = 0.88$, 95% CI $= [0.79, 0.97]$) than at baseline (mean $z = 0.54$, 95% CI $= [0.49, 0.60]$), $F(1, 716.11) = 105.18, p < .0001$ (Fig. 4a) indicating that narratives drove group representation updating (after – before: difference $= 0.34$, 95% CI $= [0.28, 0.41]$), $d = 0.31$, 95% CI $= [0.25, 0.37]$, $t(716.1) = 10.26, p < .0001$. The change in group–immigrant similarity also depended on the condition, $F(2, 716.65) = 6.58, p = .002$; specifically, the difference in correlations before and after narrative exposure in the achievement condition ($b = 0.50$) was greater than in the criminal (difference: $b = -0.29$, 95% CI $= [-0.45, -0.13]$), $d = -0.27$, 95% CI $= [-0.41, -0.12]$, $t(718.03) = -3.55, p = .0004$, and struggle (difference: $b = -0.19$, 95% CI $= [-0.35, -0.04]$), $d = -0.18$, 95% CI $= [-0.32, -0.04]$, $t(714.98) = -2.4, p = .017$, conditions.

Also important, individual immigrants' narratives updated how similarly nationality groups were represented relative to one another, $F(2, 689) = 40.49, p < .0001$ (Fig. 4b; see also Figure S6A in the Supplemental Material for a plot of change scores). In the achievement condition, homogeneity in the representation of nationality groups increased after narrative exposure compared with baseline nation ratings, $b = 0.41$, 95% CI $= [0.34, 0.47]$, $\kappa(689) = 12.46, p < .0001$. The struggle condition also showed increased homogeneity, $b = 0.39$, 95% CI $= [0.07, 0.19]$, $\kappa(689) = 3.98, p = .0001$, but the criminality condition maintained the same level of differentiation, $b = 0.003$, 95% CI $= [-0.07, 0.06]$, $\kappa(689) = -0.11, p = .915$. Pairwise analyses also indicated that representations in the achievement condition were updated more than in the struggle condition (difference: $b = 0.27$, 95% CI $= [0.17, 0.39]$), $d = 0.58$, 95% CI $= [0.37, 0.74]$, $\kappa(689) = 6.02, p < .0001$, and criminal conditions (difference: $b = 0.13$, 95% CI $= [0.02, 0.24]$), $d = 0.27$, 95% CI $= [0.08, 0.45]$, $\kappa(689) = 2.87, p = .004$.

Thus, postnarrative group–immigrant coupling occurred in all three conditions yet led to different structures in the final intergroup similarity (e.g., all groups ended up similar in the achievement condition). This dissociation suggests that the outcome of generalization (i.e., changing or maintaining priors) depends both on the relational structure of the baseline group-level representations and of the exemplars being incorporated.

Finally, there was suggestive evidence that intergroup similarity updating differed along levels of system justification, $F(1, 689) = 3.69, p = .055$, and system justification's interaction with narrative type, $F(2, 689) = 2.98, p = .052$, though we hasten to note that both the main effect and interaction were not significant (Fig. S6B in the Supplemental Material). Generally, individuals higher in system justification updated less, $b = -0.02$, 95% CI $= [-0.04, 0.0004]$, $\kappa(689) = -1.959, p = .051$. In the achievement condition, individuals with higher system-justification scores updated less than those with lower system-justification scores, $b = -0.05, SE = 0.02$, 95% CI $= [-0.09, -0.009]$, $\kappa(689) = -2.4, p = .017$. The struggle condition showed the same pattern but it was not significant, $b = -0.03, SE = 0.02$, 95% CI $= [-0.07, 0.003]$, $\kappa(689) = 1.86, p = .096$. The criminal condition showed no updating differences across levels of system justification, $b = 0.016$, 95% CI $= [-0.02, 0.05]$, $\kappa(689) = 0.83, p = .408$. Pairwise differences between the conditions were not significant ($ps > .067$). Again, these results should be interpreted with caution. Our data were inconclusive with regard to whether generalization by condition depends on system justification.

**Narratives influence support for immigration policy**

Our last set of results indicated that narratives and their corresponding influence on cognitive representations
led to differences in immigration-policy preferences. In Experiment 1, we asked participants to rate their level of agreement with maintaining the current immigration restrictions (e.g., the number of entrants and their access to national resources). However, disagreement with that statement could indicate a preference for more liberal or more strict restrictions. To eliminate this ambiguity in Experiment 2, we asked a directional question: whether participants would increase, decrease, or not change the current limits.

In Experiment 1, agreement with maintaining immigration-policy status quo showed a significant association with system-justification scores, $F(1, 292) = 39.6, p < .0001$, and a nonsignificant effect of narrative type, $F(2, 292) = 2.88, p = .058$ (Fig. 4c, top row), but was not affected by the interaction of the two, $F(2, 292) = 0.008, p = .992$. There was a main effect of system justification: Individuals with higher system-justification scores agreed that the United States should maintain the current system, $b = 0.40, 95\% \text{ CI} = [0.27, 0.52], t(292) = 6.29, p < .0001$ (see Fig. S7 in the Supplemental Material). There was also a main effect of narrative: Participants in the achievement condition ($M = 3.69, 95\% \text{ CI} = [3.35, 4.03]$) were more likely to disagree with the status quo than participants in the struggle condition ($M = 4.09, 95\% \text{ CI} = [3.8, 4.4]$, difference $= 0.40, 95\% \text{ CI} = [0.17, 0.58]$, $d = 0.24, 95\% \text{ CI} = [-0.04, 0.52], t(292) = -1.67, p = .144$, and criminal condition ($M = 4.16, 95\% \text{ CI} = [3.85, 4.5]$, difference $= 0.47, 95\% \text{ CI} = [-0.1, 1.1]$, $d = 0.28, 95\% \text{ CI} = [0.0, 0.56], t(292) = 1.97, p = .144$. Interestingly, in all three conditions, the scale’s midpoint was included in their CIs, suggesting that many individuals reported
a neutral stance after exposure to narratives. Thus, system justification predictably related to maintaining the status quo, whereas there was only suggestive evidence that achievement narratives increased a desire to change current immigration policy.

In Experiment 2, directional preferences for policies were significantly predicted by both system justification, $F(1, 750) = 88.04, p < .0001$, and narrative type, $F(2, 750) = 7.28, p = .0007$, but not their interaction, $F(2, 750) = 0.41, p = .666$ (Fig. 4c, bottom row). Once again, individuals with higher system-justification scores either wanted no change or more restrictions to the current immigration system, $b = 0.28, 95\% CI = [0.23, 0.34]$, $\tau(750) = 9.36, p < .0001$ (Fig. S7). More important, participants who read the achievement narratives ($M = 3.42, 95\% CI = [3.25, 3.59]$) were more likely to report a preference for fewer immigration restrictions than participants who read criminal narratives ($M = 3.84, 95\% CI = [3.66, 4.01]$), difference $= 0.41, 95\% CI = [0.11, 0.71]$, $d = 0.30, 95\% CI = [0.12, 0.47], \tau(750) = 3.31, p = .003$, but not participants who read struggle narratives ($M = 3.58, 95\% CI = [3.41, 3.76]$), difference $= 0.16, 95\% CI = [−0.14, 0.46]$, $d = 0.18, 95\% CI = [0.01, 0.36], \tau(750) = 1.28, p = .201$. Notably, the CIs of the achievement and struggle conditions did not contain the scale’s midpoint—the “no change” response.

Speaking to the predictive value of homogenized cognitive representations, the differentiated or homogenized state of individual immigrant representations moderated the impact of narrative type on policy preferences in Experiment 1, $F(2, 285) = 9.13, p = .0001$, and Experiment 2, $F(2, 726) = 27.2, p < .0001$ (Fig. 5). Participants in the achievement condition, $exp b_1 = −0.64, 95\% CI = [−1.3, 0.04]$, $exp b_2 = −0.8, 95\% CI = [−1.1, 0.47]$, and struggle condition, $exp b_1 = −1.34, 95\% CI = [−1.9, −0.74], exp b_2 = −1.1, 95\% CI = [−1.3, −0.77]$, wanted to both change and decrease limits on immigrants the more homogenous their representations. The same did not occur for the criminal stories, $exp b_1 = 0.79, 95\% CI = [0.02, 1.6], exp b_2 = 0.77, 95\% CI = [0.36, 1.2]$, differences from other conditions $> 1.4, ds > 0.83, ps < .01$.

In sum, once we eliminated the directional ambiguity of the policy question and increased the sample size, we observed a main effect of narrative: Specifically, participants in the achievement and struggle conditions were more likely to choose to decrease limitations on immigrants; those in the criminal condition showed a preference for the current policy. Furthermore, across both experiments, system justification predicted a preference for the status quo if not an increase in immigration restrictions. Finally, in both the achievement and struggle conditions, more homogenous representations were associated with less restrictive immigration-policy preferences.

**Discussion**

Media narratives have remarkable power to influence public perception of people and policy. Here, we tested the impact of achievement, criminal, and struggle narratives on American participants’ latent representations of German, Russian, Syrian, and Mexican immigrants. Across two experiments, we discovered that the achievement narrative homogenized immigrants from these different nationalities, but criminal and struggle narratives differentiated them—they clustered White versus non-White as perceived by participants. This organization was undetectable in the mean-based ratings, which averaged over the entire sample in each condition. Study 3 indicated that status was not a better account for our findings than ascribed race. These narrative effects generalized to the immigrants’ respective nationality groups: Racialized nation representations were updated and homogenized after participants read the achievement narrative, but continued to be differentiated after they read the criminal or struggle narratives.

As predicted, ideology (i.e., system justification) moderated several of our findings: Individuals with higher system-justification scores differentiated immigrants more overall and were less influenced by narratives compared with individuals with lower system-justification scores. However, one of our more notable findings was that the criminal narrative made immigrant representations of individuals with low system justification as differentiated as those of individuals with high system justification. Said another way, having low levels of system justification did not buffer these participants against the effects of the criminal narrative, which also explains why the criminal narratives generated more differentiation on average than even the struggle narratives.

Lastly, exposure to narratives influenced immigration-policy preferences: Achievement and, to a lesser extent, struggle narratives were associated with endorsing fewer restrictions on the number of immigrants allowed to immigrate and their access to national resources (consistent with previous correlational findings; Reyna, Dobria, & Wetherell, 2013). This pattern was moderated by the degree of homogeneity exhibited by participants in the main task: Individuals with more homogenous representations expressed greater support for immigrants and immigration.

**Potential mechanisms driving homogenization, differentiation, racialization, and updating**

The homogenizing effect of achievement narratives and the differentiating effect of criminal or struggling narratives may be driven by two distinct but related
Narratives Shape Immigrant Representations

Psychological processes. The first process relies on insights from the density hypothesis, which suggests that positive information tends to be represented more similarly than negative information (Alves et al., 2017). Specifically, events or features that are modal in a distribution tend to be imbued with positivity; consequently, there is a restricted range on what counts as “good” (anything too far from the central tendency ceases to be good). Consequently, all good things will tend to be similar. In the context of the United States, which claims a merit-based social structure, a relatively narrow band of achievements are widely recognized as constituting success. There are, however, myriad ways to struggle (e.g., experience difficulty securing housing) or violate rules (e.g., steal food), allowing for greater differentiation. Note, however, that our effects are not due to lesser or greater homogeneity of the stories themselves: When the stories were not yoked to people in the pilot data, there were no differences across narratives in how similar the stories were within condition.

The second, motivation-driven process is template matching. The achievement narrative may have homogenized immigrant representations because immigrants now fit the archetype of the American dream. This allows raters to integrate them into a common in-group identity—Americans (Kunst, Thomsen, Sam, & Berry, 2015). Criminal and struggle narratives differentiated instead because they evoked “othered” out-group identities (Arcimaviciene & Baglama, 2018). In line with this, immigrants in the context of achievement narratives were rated as more American than those featured in struggle or criminal narratives.

Fig. 5. Policy preferences as a function of homogenization of immigrant representations and narrative condition, separately for (a) Experiment 1 and (b) Experiment 2. Each dot represents the policy-preference response and average Fisher's z score per participant. The x-axis represents the average correlation (Fisher's z transformed) between all pairs of immigrants; higher z scores indicate more homogenization. In (a), higher scores on the y-axis represent agreements to maintaining current limits on immigrants, and lower scores indicate a desire to change those limits. In (b), the y-axis represents whether participants wanted to increase or decrease limits on immigrants. Slopes indicate best-fitting regressions, and shaded regions represent 95% confidence intervals.
However, immigrants were not simply othered when differentiated; they were organized along a racial axis. “White” and “non-White” clusters thus occupied two distinct trait spaces even though all immigrants were characterized as criminals. The consistent racialization of immigrant representations is especially noteworthy given the turbulent political contexts in which we collected both primary data sets. Although Germans and Russians could have easily been represented separately, given their nations’ differing associations to the United States (friend and foe, respectively), their shared status as majority White was a stronger driver of participants’ representations. Conversely, the clustering of Mexicans and Syrians has been documented since the 9/11 attacks, which changed representations of Muslims and Latinxxs into a “brown threat” and codified their inter-attacks, which changed representations of Muslims and Latinxxs into a “brown threat” and codified their inter-changeability and criminalization through laws on border protection and the War on Terror (Flores & Schachter, 2018; Rivera, 2014). Consistent with previous theorizing, our results showed that the criminal narrative appears to mobilize the colonial dimension of race to reinforce subgrouping of immigrants (Provine & Doty, 2011), which has implications for reinforcing racism in consequential political decisions (e.g., who is naturalized and subsequently structurally integrated).

The nationality-updating results from the achievement condition in Experiment 2 are striking given the rich literature on stereotype immutability and subtyping (Bosak & Diekman, 2010; Maurer, Park, & Rothbart, 1995). In many cases, presenting individuals with counterstereotypical exemplars results in the treatment of those exemplars as exceptions, which then leads to a failure to incorporate those exemplars into the representation of the larger group (Maurer et al., 1995). One possible explanation for our updating effect is that our paradigm forced participants to learn about different immigrants trial by trial. This structure allowed them to incrementally modify latent group structures as they encountered multiple immigrants and their narratives (Lau, Pouncy, Gershman, & Cikara, 2018). Nevertheless, researchers should remain mindful of the likelihood of subtyping effects in the absence of multitrial task structures.

**Limitations and implications**

An important limitation of the current investigation is our use of convenience sampling. Future research will have to collect data from representative samples, particularly if this work is to be relevant for political practice. Related future research should include a much broader array of stories, countries, and immigrant names to test the generalizability of our findings (Judd, Westfall, & Kenny, 2012).

A broader practical challenge is that our findings regarding achievement narratives could ironically serve a system-justifying motive (e.g., rags-to-riches narratives; Wakslak, Jost, Tyler, & Chen, 2007). High-achieving immigrants may come to be viewed as useful to the dominant majority group—a phenomenon that could result in the commodification of high-achieving immigrants while setting a near impossible standard of inclusion for everyone else (Martinez, Feldman, & Cikara, 2017).

Our results generate two important implications: Immigrants can shape public opinion on policies such as the Dream Act, the Diversity Immigrant Visa program, and the wall as border security through the power of sharing their own narratives. Likewise, there is an urgent need for responsible, widespread reporting of the actual relationship between immigration and crime and an increase in the proportion of narratives that counter the criminal-immigrant stereotype.

**Transparency**

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**Author Contributions**
All authors developed the research idea and experimental design. M. Cikara collected the data, and J. E. Martinez analyzed the data with input from M. Cikara. All authors cowrote the article.

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The author(s) declared that there were no conflicts of interest with respect to the authorship or the publication of this article.

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**Open Practices**
Data, analysis code, and materials for both experiments and Study 3 have been made publicly available via OSF and can be accessed at https://osf.io/2xgyf/. The design and analysis plans for Experiment 2 and Study 3 were preregistered at https://osf.io/f4u92 and https://osf.io/kub2d, respectively. Additional analyses that were not preregistered are noted in the main text and in the Supplemental Material available online. This article has received the badges for Open Data, Open Materials, and Preregistration. More information about the Open Practices badges can be found at http://www.psychologicalscience.org/publications/badges.

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Supplemental Material
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Notes
1. The present article reports three studies. The first two contained experimental manipulations and are thus referred to as Experiments 1 and 2. Because the third contained no manipulations, we refer to it for accuracy as Study 3.
2. We observed a significant simple slope in the struggle condition: Unsurprisingly, high social-dominance-orientation participants differentiated poor or struggling immigrants more than low social-dominance-orientation participants.
3. As a more rigorous test, this analysis was also implemented using mixed-effect regressions in which all participants’ similarity matrices were combined, the similarity of each immigrant pair was treated as a single observation, and the dependencies between observations were accounted for by random effects of participants and immigrant pairs. The results did not differ much from the OLS analysis. For interested readers, these analyses are available in the analysis scripts on our OSF project (https://osf.io/2xggy/).

References


