Tight Cultures Breed Dehumanization: An Interdisciplinary Approach

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Abstract

Research on antecedents of dehumanization has exclusively focused on intra- and inter-personal factors. In the current research, we examined whether cultural tightness (i.e., strengths of social norms and punishments of deviant behaviors), a macro-cultural factor, could result in dehumanization in the United States. Six studies employing mixed methods were conducted. Using ecological data, we showed that tightness could predict dehumanization both cross-sectionally (i.e., across 50 states, Study 1) and longitudinally (i.e., 1800–2000 CE, Study 2). A quasi-experiment using employees from a tight corporate culture (i.e., finance) versus a loose one (i.e., high-tech) replicated the finding (Study 3). Controlled experiments using different manipulation methods for cultural tightness further demonstrated a direct causal relationship from tightness to dehumanization (Studies 4–6). In addition, such a relation was mediated by an avoidance motivation (Studies 5 and 6). Implications were discussed.

Introduction

An extensive body of literature has revealed that people have a general tendency to place others into different categories (e.g., Tajfel et al., 1971). It remains shocking, however, when we stop putting a human into a human category, perceiving a target as possessing less (or even no) humanness, a phenomenon known as dehumanization (Haslam, 2006). Needless to say, dehumanization can cause profound consequences, ranging from reduced perspective-taking and helping behaviors (e.g., Čehajić et al., 2009; Viki et al., 2012), bullying (Obermann, 2011), aggression (Rai et al., 2017), torture (Viki et al., 2013), to even killing and genocide (Stanton, 2013; see also Haslam, 2019). Given its significance, a growing number of studies have examined the psychological antecedents of dehumanization, including emotion, motives, cognition, and interpersonal relationships (Haslam & Loughnan, 2014). However, few studies have paid attention to more macro-level social and cultural structures that can be of equal importance in triggering dehumanization. In the current research, we examined whether cultural tightness (i.e., strengths of social norms and punishments of deviant behaviors), a concept with theoretical roots in anthropology, sociology, and psychology (e.g., Berry, 1967; Boldt, 1978; Pelto, 1968), could lead people to dehumanize others. Moreover, we examined whether such an effect, if it occurs, could be accounted for by one's avoidance motivation.

Avoidance Motivation in Tight Cultures

Compared to loose cultures, tight cultures are characterized by stronger norms and more severe sanctioning of norm-deviant behavior. As such, respondents in tighter cultures have expressed a stronger preference for norm followers as leaders (Stamkou et al., 2019). Empirical studies even revealed that individuals living in tight nations, compared to loose ones, have developed neural systems that are more sensitive to norms (Mu et al., 2015). More importantly, sanction is a common tool to enforce norms in tight cultures (Carpenter, 2000; Gelfand et al., 2006). In other words, punishments are deeply embedded in multiple societal levels of a tight culture (Gelfand et al., 2006). Not surprisingly, cultural tightness is a catalyst of punitive beliefs by increasing people's motivation to punish norm violators (Jackson et al.,

2021). In this vein, people living in a tight culture could have a stronger motive to avoid making mistakes. Preliminary support comes from a consumer behavior study that showed advertising themes emphasizing prevention focus (i.e., avoiding punishments, losses, and danger) are more prevalent in tight, compared to loose, cultures (Li et al., 2017).

Meanwhile, avoidance motivation is defined as the motivation to strive to avoid undesirable outcomes, such as punishments (Elliot, 2006), and it can be activated automatically (Roskes et al., 2014). Avoidance motivation plays an important role in organisms' abilities to adapt to the environment (Tooby & Cosmides, 1990) because it helps people avoid negative and harmful psychological experiences. However, as a direct consequence, it also leads people to miss opportunities for positive new experiences (Elliot, 2006; McFarland & Miller, 1994). Unlike those attempting to create positive and new social experiences, people with an avoidance motivation do not want to broaden their attention and show responsiveness to others (Derryberry & Tucker, 1994; Förster & Higgins, 2005; Impett et al., 2010). In other words, when avoiding negative social outcomes, individuals narrow their focus on their individual concerns, leaving less attention available for others' needs. Avoidance motivation, both as a dispositional individual trait and short-term striving goal, reliably predicted diminished social bonding and affiliation (Gable, 2006), and avoidance goals were associated with decreased relationship satisfaction over time (Impett et al., 2010).

Cultural Tightness and Dehumanization

Dehumanization refers to perceiving people as lacking a human mind, which includes higher-order cognition (e.g., rationality and self-control) and fundamental experience (e.g., feelings and emotions; Haslam & Loughnan, 2014). A remarkable mistake is, dehumanization can be observed in various domains, including interracial relations, gender relations, medicine, and technology (for a review, see Haslam, 2006). A growing number of studies have now revealed intra- and interpersonal factors that could trigger dehumanization. These include the feeling of disgust (e.g., Hodson & Costello, 2007), the target's social category (e.g., Kersbergen & Robinson, 2019; Harris & Fiske, 2006; Petsko et al., 2020; Rudman & Mescher, 2012), a group-protective motive (Koval et al., 2012), heuristic thinking (Prati et al., 2015), perceived threat (Viki et al., 2012), social power (e.g., Gwinn et al., 2013; Hodson & Costello, 2007), motivation for money (e.g., Wang & Krumhuber, 2017), certain work features (Belmi & Schroeder, 2021; Valtorta et al., 2019), and immoral acts or infidelity (e.g., Bastian et al., 2013; Rodrigues et al., 2018).

Given that a society with a tight culture constitutes prohibition and punishment of deviant behaviors (Gelfand et al., 2006), people living in such a culture could show a higher level of avoidance motivation that directs them away from potential threats and punishments (Elliot, 2008). We predicted that avoidance motivation could lead to dehumanizing others for a couple of reasons. First, social avoidance —especially avoidance of potential punishments—is often coupled with excessive attention to one's behavior and oneself (Elliot, 2013), and excessive self-focus has been found to amplify dehumanization (e.g., Locke, 2009; Wang & Krumhuber, 2017; Wang et al., 2020). Second, although avoidance motivation is often triggered by threats (e.g., Cavallo et al., 2010), avoidance motivation could in turn make

individuals hypersensitive to threats (Roskes et al., 2014). Studies have consistently shown that threats from either a perceived target (e.g., group membership; Maoz & McCauley, 2008) or brought about by one's state of mind (e.g., mortality salience; Goldenberg et al., 2009) can result in dehumanization. Finally, avoiding social experience can largely affect people's social interactions. Engaging in meaningful social interactions and bonding requires people to efficiently detect others' feelings and mind in their social environment. However, considering and attributing mental states to others become less relevant when people show a reduced intention to seek social experiences and make connections. Indeed, previous empirical studies have consistently demonstrated that those with a reduced need for social interaction and bonding are less likely to perceive personhood in other people (Powers et al., 2014; Waytz & Epley, 2012). Therefore, we predicted that cultural tightness should lead to the dehumanization of others. This effect, if it occurs, should be driven by an avoidance motivation evoked by a tight culture.

The Present Research

The current research aimed to examine whether cultural tightness could result in dehumanization. In addition, we tested whether social avoidance could act as a mediator in this process. Cultural differences in tightness were initially identified across countries (Gelfand et al., 2011); however, cross-country comparisons can be subject to various extraneous variables (e.g., ideologies, nonequivalent key concepts, or matching of samples; Gharawi et al., 2009; Singh, 1995). To minimize the potential influence of these variables, all studies in the present research were carried out in a single country, the United States. It is worth pointing out that empirical studies have shown reliable variation in tightness–looseness across different states (Harrington & Gelfand, 2014), different time periods (Jackson et al., 2021), and different industries (e.g., Madan et al., 2018; Ozeren et al., 2013; Üstün & Kılıç, 2017) in the United States. This is also in line with the within-culture variation approach in the field of cultural psychology (e.g., Kaasa et al., 2014; Leung & Cohen, 2011; Wang, 2017).

To test our hypothesis, we used a combination of methods. Specifically, in Study 1, we employed archival and online search query data to test the relation between statewide variation in cultural tightness and dehumanization. In Study 2, through a historical textual analysis using time-series methods, we tested whether variation in cultural tightness could predict time-lagged shifts in dehumanization from 1800 to 2000 CE. Study 3 employed a quasi-experiment by examining whether employees from a tight corporate culture (i.e., finance) would show higher levels of dehumanization than those from a loose culture (i.e., high tech). Studies 4–6 further employed controlled experiments to test a direct causal relationship. Using different manipulation methods, including placing people in a simulated tight culture (versus a loose one, Studies 4 and 6) and temporarily shifting their support for cultural tightness (versus looseness, Study 5), we tested whether tightness would increase participants' level of dehumanization. Furthermore, we examined whether the effect of tightness on dehumanization could be mediated by an avoidance motivation triggered by such an environment (Studies 5 and 6).

Sample Size Determination, Ethics, and Statistical Reporting. Given that the aim of the current study was to test the effect of cultural tightness on dehumanization, we expected a main effect of culture condition.

For Studies 3–6, we aimed at a sample of 100 participants per condition. Sensitivity power analyses revealed that a minimum effect size of $f = 0.20$ (Study 3: $N = 214$; Study 4: $N = 198$; Study 5: $N = 198$; Study 6: $N = 203$) could be detected under standard criteria (i.e., $a = 0.05$ two-tailed, $\beta = 0.90$). Data for Studies 3-6 can be accessed via

https://osf.io/jbnxs/?view_only=86a226a58f6b4b3c80010ec3afe91937. The R code for the analyses in Studies 1 and 2 is available from the corresponding author on reasonable request during the review process and will be made available online once the manuscript is accepted for publication. All studies were conducted with ethical approval from the Department of Psychology of the author's institution (ethical approval code: NKPSYP181001), and we have complied with all relevant ethical regulations. All p values reported in the current manuscript are one-sided.

Study 1

Study 1 was to employ archival and online search query data to investigate whether statewide variation in cultural tightness could predict statewide differences in dehumanization. To capture cultural tightness, the existing tightness-looseness scores of 50 U.S. states from Harrington and Gelfand (2014) were used. Dehumanization was indexed by the reduced frequency of search and use of words conveying humanness (Bastian & Haslam, 2010; Haslam et al., 2005) via Google Trends (GT).

Method

Cultural Tightness at the State Level. We directly used Harrington and Gelfand's (2014) cultural tightness scores for the 50 U.S. states, which comprise a composite index of nine items reflecting how harshly states punish norm violation and the presence of institutions that enforce order.

(De)humanization-related Google Search Volume. GT reports the volume of searches entered into Google by calculating the relevant number of searches for a particular term relative to the total number of Google searches. This reflects public interests in and frequency of the usage of certain concepts or words (Lai et al., 2017; Wang et al., 2020). The keywords used in GT conveyed humanization, including terms describing basic human emotions and experiences as well as higher order cognition. We chose all words that were adjectives from two most frequently used scales on (de)humanization in the literature: (de)humanization scales by Bastian & Haslam (2010) and Haslam et al. (2005). Four words were removed from the analysis due to reasons such as ambiguity in meaning and an extremely low search volume.[1] In the final analysis, 26 adjectives of positive and negative valence were included (16 were from the scale by Bastian & Haslam, 2010, and 10 were from the scale by Haslam et al., 2005). In particular, the traits on human uniqueness were *conscientious* (pos.), *humble* (pos.), *polite* (pos.), *thorough* (pos.), *open-minded* (pos.), *emotional* (pos.), *responsive* (pos.), *hard-hearted* (neg.), *ignorant* (neg.), *rude* (neg.), *stingy* (neg.), and *superficial* (neg.). The traits on human nature were *curious* (pos.), *friendly* (pos.), *helpful* (pos.), *refined* (pos.), *cultured* (pos.), *rational* (pos.), *logical* (pos.), *intelligent* (pos.), *impatient* (neg.), *impulsive* (neg.), *jealous* (neg.), *nervous* (neg.), *shy* (neg.), and *unsophisticated* (neg.)

Next, we added the search volume[2] of words in positive valence together under each dimension (i.e., human nature and human uniqueness). The same applied to the words in negative valence. Then, we deducted the volume of the positive from that of the negative for each dimension, with higher numbers corresponding to higher frequencies of using words conveying dehumanization We calculated the scores for the two scales combined and the score for each separate scale.

Considering the causal time lag of the influence of the independents on the dependents, the time range for the GT query was set from January 1, 2014, to December 31, 2019.[3]

Results

As predicted, Pearson correlation analysis revealed that states with higher levels of cultural tightness showed higher frequencies of searching and using words conveying dehumanization and deprivation of human uniqueness: $r = .715$, $p < .001$ [combing two scales]; $r = .493$, $p = .001$ [using Bastian & Haslam (2010)]; and $r = .752$, $p < .001$ [using Haslam et al. (2005)], as well as deprivation of human nature: $r = .418$, $p = .037$ [combing two scales]; $r = .368$, $p = .009$ [using Bastian & Haslam (2010)], and $r = .350$, $p = .086$ [using Haslam et al. (2005)] (see Figures 1A and 1B). The detailed results concerning each word of the two scales can be found in Supplementary Materials (Figures s1 to s26). In summary, the results of Study 1 consistently suggested that cultural tightness at the state level predicts dehumanization, indexed by an increased frequency of using and searching for words conveying dehumanization.

Study 2

Study 2 examined whether the historical dynamics of cultural tightness would predict the historical dynamics dehumanization. Cultural psychologists have recently applied time-series analyses (traditionally used in econometrics) to predict changes in culture over time (Caluori et al., 2020; Grossman & Varnum, 2015; Varnum & Grossman, 2017), and we leveraged this method to examine whether cultural tightness could predict and precede changes in dehumanization from 1800 to 2000 using historical linguistic data from the Google Books American Corpus (GBAC).

Method

Measurement of Cultural Tightness. We measured cultural tightness through the frequency of use of the 40 words comprising the tightness–looseness dictionary published by Jackson and colleagues (2019). Twenty of the words relate to the word "tight" because they connote constraint or rule enforcement (e.g., "restrain," "comply," "uniformity," and "enforce"). The other twenty words relate to the word "loose" because they connote freedom or norm violation ("allow," "freedom," "create," and "openness"). Following Jackson and colleagues (2019), we subtracted the usage of loose words from that of tight words to create an overall linguistic index of cultural tightness.

Measurement of Dehumanization. As we did in Study 1, we measured dehumanization through the frequency of use of the adjectives from Bastian and Haslam (2010) and Haslam et al. (2005), the two

most frequently used scales on (de)humanization in the literature. As in Study 1, the words "active" and "disorganized" were removed due to ambiguity in meaning and overlap with the definition of cultural tightness/looseness, respectively. In the final analysis, 28 adjectives that were positive and negative in valence were included (18 from Bastian & Haslam, 2010, and 10 from Haslam et al., 2005). In particular, the traits on human uniqueness were *broad-minded* (pos.), *conscientious* (pos.), *humble* (pos.), *polite* (pos.), *thorough* (pos.), *open-minded* (pos.), *emotional* (pos.), *responsive* (pos.), *hard-hearted* (neg.), *ignorant* (neg.), *rude* (neg.), *stingy* (neg.), and *superficial* (neg.). The traits on human nature were: *curious* (pos.), *friendly* (pos.), *helpful* (pos.), *fun-loving* (pos.), *refined* (pos.), *cultured* (pos.), *rational* (pos.), *logical* (pos.), *intelligent* (pos.), *impatient* (neg.), *impulsive* (neg.), *jealous* (neg.), *nervous* (neg.), *shy* (neg.), and *unsophisticated* (neg.).

We scraped data from the Google Ngram Viewer (https://books.google.com/ngrams) that showed the frequency of these words' appearances in published English works in the United States between 1800 and 2000 based on Google Books American Corpus (GBAC). GBAC is a 155-billion-word corpus containing a diverse set of written material published in the United States from 1800 onward, and we collected data from this corpus by scraping the N-gram Viewer. We only took data from 1800–2000 because the increase in online publications after 2000 makes 21st century data very different in content and potentially unrepresentative of the population (Pechenick, Danforth, & Dodds, 2015). Same as the index of cultural tightness, we first compiled the usage frequency of words for each valence (i.e., positive and negative). Then, we subtracted the usage frequency of the positive from that of the negative to create a linguistic index, with higher numbers corresponding to higher frequencies of using words conveying dehumanization.

Results

Detrending and Stationarity Checks. Before testing our hypotheses, we detrended the time series data of words of cultural tightness and dehumanization to make sure our words and variables were not confounded with an underlying trend. We first used regression-based residuals to remove autoregressive trends associated with changing general levels of the passage of time. Then we tested whether our data were "stationary" (not associated with an underlying trend) using an augmented Dickey-Fuller root test. Results showed that both dehumanization ($p < .001$) and cultural tightness ($p < .001$) supported the stationarity and thus our data were suitable for time-series analysis.

Regression Analysis. We tested for the historical relationship between cultural tightness and dehumanization using regression analysis. As predicted, cultural tightness significantly correlated with dehumanization, $b = .492$, $SE = .062$, $t(200) = 7.970$, $p < .001$, such that the increased cultural tightness related to the increased dehumanization.

Granger Test of Causality. We next conducted Granger tests, which can examine causality (i.e., an exogenous variable [tightness] can predict future changes in an endogenous variable [dehumanization] beyond earlier values of that endogenous variable). Such a form of causal inference in time-series data is more informative than correlational analysis is (Ding et al., 2006). Granger tests require specified lagged

values, but because we had no theoretical priors for how long it takes for cultural tightness to translate into dehumanization, we replicated the model across four lagged intervals: 2 years, 4 years, 6 years, and 8 years.

Results showed a significant relationship at a lag of 8 years. That is, cultural tightness at time t could predict dehumanization at t + 8 years, controlling for dehumanization at time t (see Table 1 for full results).

Using linguistic indicators of cultural tightness across 200 years, Study 2 supported our hypothesis that cultural tightness positively predicts and precedes dehumanization.

Table 1. Granger Causality Test Results in Study 2

Lag	Tightness→Dehumanization	Dehumanization→Tightness
2 years	$F(1,196) = 0.95, p = .387$	$F(1,196) = 0.45, p = .638$
4 years	$F(1,192) = 1.55, p = .189$	$F(1,192) = 1.02, p = .400$
6 years	$F(1,188) = 1.54, p = .167$	$F(1,188) = 2.06, p = .060$
8 years	$F(1,184) = 2.47, \boldsymbol{p = .015}$	$F(1,184) =1.16, p = .326$

Study 3

Study 3 was to test the relation between cultural tightness and dehumanization by recruiting employees working in two industries (i.e., finance and high technology) representing a tight and a loose corporate culture in the United States, respectively (Madan et al., 2018).

Method

Participants. Two hundred and fourteen employees (M_{age} = 31.76, SD = 6.38, 73 women) were deliberately selected from two industries: finance (including Bank of America, Wells Fargo, and Citibank) and technology (including Google, Oracle, and Dell) to represent corporate cultures varying on tightness. The finance industry represents a tight American company culture and the high-tech industry represents a loose American company culture (Madan et al., 2018). In particular, 105 participants were from finance and 109 participants were from the high-tech industry. Participants completed the study on a voluntary basis without receiving compensation. For Studies 3-6, we have obtained informed consent from all participants on-line.

Procedure and Measures. The study was conducted online using Qualtrics survey software. After reading instructions and providing general demographic information, participants first reported their industry. As a

validation, they were required to indicate the extent to which they believed their industry has a tight culture on the Tight-Loose Culture Scale (Gelfand et al., 2011) that was further modified to fit the current context. Example items were, "In my company/industry, there are very clear expectations for how people should act in most situations" and "In my company/industry, there are many social norms that people are supposed to abide by." Responses were made on 6-point Likert scales (1 = *strongly disagree* to 6 = *strongly agree*) and an overall tightness score was calculated by averaging the scores across the items with higher scores corresponding to higher levels of perceived tightness (a = 0.841).

Participants then completed an eight-item dehumanization scale adapted from Bastian et al. (2013) to measure the extent to which one deprived others of their humanness at work. Example items were, "I feel that people at work are superficial, like they have no depth" and "I feel that other people at work lack self-restraint, like animals." All responses were made on 7-point Likert scales (1 = *not at all*, 7 = *very much so*). An overall dehumanization (a = .814) score was calculated by averaging the items across these items, with higher scores indicating higher levels of dehumanization. The order in which the items were presented within the scale was randomized.

For control variables, participants reported the perceived social rank on the social status ladder (Adler et al., 2000), ranging from 1 (*the lowest standing*) to 10 (*the highest standing*). In addition, they indicated their income level (14 options from 1 = *less than $10,000* to 16 = *$500,000 or more*).

Results

First, employees in finance (M = 4.71, SD = 0.71) perceived their working environment as tighter than those in the high-tech industry did (M = 3.48; SD = 1.03), $F(1, 212) = 104.06$, $p < .001$, $\eta_p^2 = .329$, validating our method.

As predicted, univariate tests showed that employees in the finance field (M = 3.61; SD = 0.91) reported a higher level of dehumanization than those in the high-tech industry did (M = 3.24; SD = 1.08), $F(1, 212) = 7.07$, $p = .008$, $\eta_p^2 = .032$, 95% CI = [0.095, 0.636]. This remained the case after controlling for income and perceived social standing, $F(1, 210) = 7.39$, $p = .007$, $\eta_p^2 = .034$, 95% CI = [0.105, 0.659].

Study 4

Study 4 was to test a causal relationship between cultural tightness and dehumanization by directly manipulating perceived cultural tightness.

Method

Participants. Two hundred and six American participants were recruited from Cloud Research (previously known as Turk Prime). Eight participants failed attention check questions and were thus excluded from the analysis. This left 198 participants (104 women, M = 39.36, SD = 11.58, 80% European American, 9% African American, 6% Asian American, 5% other) in the final analysis. Participants were randomly

assigned to either a tightness or a looseness condition, resulting in 98 participants in the tight condition and 100 participants in the loose condition. All participants were remunerated a small amount of money at the end of the study.

Procedure and Measures. To manipulate cultural tightness, participants were first presented with a scenario that seems to be virtual but had realistic significance. They were asked to imagine themselves living in the world depicted as vividly as possible, a method adopted and modified from a well-validated experimental paradigm (e.g., Blake & Brooks, 2019). In particular, participants were told that, in 2208, natural resources on Earth had been depleted. As a result, they, together with few other remaining people, had been sent to a newly discovered planet. Following Jackson et al. (2021), participants in the tightness condition were told, "For a society to be successful, it should be built on a foundation of law and order. Therefore, the new society should have strong social norms and deviant behaviors should be punished." In contrast, participants in the looseness condition were told, "For a society to be successful, it should be built on a foundation of freedom and openness. Therefore, although the new society can have norms, deviant behaviors should be tolerated." They were further required to select from a corresponding list the rules they would like the new society to adopt (see Supplementary Materials for details). To strengthen the manipulation effect, participants were further asked to write down a few suggestions that could reinforce the foundation of law and order (tightness condition)/freedom and openness (looseness condition). A pilot study with a separate group of participants (N = 104) showed those in the tightness condition (M = 4.76, SD = 0.78, 7-point Likert scale) were significantly more likely to perceive the culture of the simulated world as tighter than those in the looseness condition were (M = 3.24, SD = 1.17), F(1, 102) = 61.1, p < .001, η_p^2 = .375 (see Supplementary Materials).

Next, participants completed the eight-item modified dehumanization scale by Bastian et al. (2013) to assess the extent to which they dehumanize others. Example items were, "I feel that other people living on this planet are superficial, like they have no depth" and "I feel that other people living on this planet lack self-restraint, like animals." All responses were made on 7-point Likert scales (1 = *not at all*, 7 = *very much so*). An overall dehumanization score (a = .856) was calculated by averaging the items, with higher scores indicating stronger levels of dehumanization. The order in which the items were presented within the scale was randomized.

Results

Replicating the finding in Study 3, participants in the tight condition (M = 3.85; SD = 1.20) reported a higher level of dehumanization than those in the loose condition did (M = 3.34; SD = 1.15), F(1, 196) = 9.16, p = .003, η_p^2 = .045, 95% CI = [0.177, 0.837].

Study 5

Study 5 was to replicate the causal link between cultural tightness and dehumanization by using a different manipulation method. More importantly, we assessed the potential mediating role of social

avoidance motivation in this process.

Method

Participants. Two hundred and three American participants were recruited from Cloud Research. Five participants failed attention check questions and were thus excluded from analysis. This left 198 participants (95 women, M = 34.92, SD = 12.2, 71% European American, 11% African American, 11% Asian American, 5% Latin American, and 2% other) in the final analysis. Participants were randomly assigned to either a tightness or a looseness condition, resulting in 98 participants in the tight condition and 100 participants in the loose condition. All participants were remunerated a small amount of money at the end of the study.

Procedure and Measures. To manipulate cultural tightness, participants were first presented with a writing task. Following Jackson et al. (2021), participants in the tightness condition read a short paragraph attributing the success of the United States to its strong foundation upon law and order. In the looseness condition, participants read an identical paragraph, this time attributing the success of the United States to its commitment to freedom and openness. Following Jackson et al. (2021), to increase the power of the manipulation, participants in the tightness condition were required to personally endorse up to three elements of current American society that "preserve law and order," whereas participants in the looseness condition were required to endorse up to three elements of American society that "preserve freedom and openness." These endorsement items were to increase the strength of our manipulation because research on cognitive dissonance and self-perception shows personal endorsement increases the efficacy of persuasion (Bem, 1972; Festinger, 1962). A pilot study with a separate group of participants (N = 104) showed those in the tightness condition (M = 6.76 SD = 1.52, 9-point Likert scales) believed American culture should be tighter than those in the looseness condition did (M = 4.81, SD = 1.80), $F(1, 100)$ = 39.6, p < .001, η_p^2 = .284. In other words, although manipulating culture-level variables such as tightness is difficult in an experimental setting, this approach temporarily allowed us to shift participants' support of cultural tightness.

To measure social avoidance, the six-item avoidance dimension of the ATQ scale by Elliot and Trash (2010) was slightly modified to assess a situational sensitivity to negative stimuli (i.e., punishment). Example items were, "Living in the USA, I would be a very nervous person" and "Living in the USA, it would not take much to make me worry." Responses were made on 7-point Likert scales (1 = *not at all*, 7 = *very much so*). An overall social avoidance score was calculated by averaging the scores across items, with higher scores indicating stronger levels of avoidance motivation (a = .901).

Next, participants completed Bastian et al.'s (2013) eight-item dehumanization scale. Example items were, "I feel that other Americans are superficial, like they have no depth" and "I feel that other Americans lack self-restraint, like animals." All responses were made on 7-point Likert scales (1 = *not at all*, 7 = *very much so*). An overall dehumanization score (a = .836) was calculated by averaging the items across

these items, with higher scores indicating stronger levels of dehumanization. The order in which the items were presented within the scale was randomized.

Results

Replicating the finding in prior studies, participants in the tight condition (M = 3.65, SD = 0.96) reported a higher level of dehumanization than those in the loose condition did (M = 3.11; SD = 1.11), $F(1, 196)$ = 13.56, p < .001, η_p^2 = .065, 95% CI = [0.252, 0.831]. In addition, those in the tight condition (M = 4.17, SD = 1.42) also showed a higher level of social avoidance than those in the loose condition did (M = 3.61, SD = 1.48), $F(1, 196)$ = 7.52, p = .007, η_p^2 = .037, 95% CI = [0.159, 0.970].

We conducted a mediation analysis to examine whether cultural tightness leads to objectification via social avoidance. As shown in Figure 2, condition (tight, loose) predicted social avoidance as well as dehumanization. Similarly, social avoidance predicted dehumanization. When controlling for social avoidance, the effect of condition on dehumanization was reduced. A bootstrapped analysis (5000 re-samples) revealed the 95% confidence interval for the indirect effect did not include zero, $a*b$ = .049, SE = 0.026, CI = [.011 to .111]. These indicate the dehumanization of others caused by cultural tightness was mediated by social avoidance motivation.

Study 6

Study 6 was to use a different manipulation method for cultural tightness to replicate the findings of Study 5 conceptually. As such, we predicted social avoidance motivation would account for the effect of cultural tightness on dehumanization.

Method

Participants. Two hundred and ten American participants were recruited from Cloud Research. Seven participants failed attention check questions and were thus excluded from the analysis. This left 203 participants (113 women, M = 38.06, SD = 11.80, 74% Caucasian American, 7% African American, 9% Asian American, 8% Latin American, and 2% other) in the final analysis. Participants were randomly assigned to either a tightness or a looseness condition, resulting in 102 participants in the tight condition and 101 participants in the loose condition. All participants were remunerated a small amount of money at the end of the study.

Procedure and Measures. After reporting basic demographic variables, participants were presented with a scenario in which they were asked to imagine themselves living in a newly discovered community depicted as vividly as possible. In particular, participants were told, "Recently, anthropologists have discovered a new community, called Tekki. By physically and emotionally participating in the social interaction of the host society, for instance, learning their language, eating what Tekkiers eat, and taking part in most of their daily activities, anthropologists have found that Tekki has many social norms [Tekki has very few social norms] Everyone is expected to follow all types of rules and customs [Even for these

few social rules and customs, people are not expected to follow them completely]. In other words, there are strong expectations for Tekkiers to uphold many practices [there are no expectations for Tekkiers to uphold practices]. In addition, once they violate these norms, they will face severe punishments [even if they violate any norms, they will NOT face punishments]. For example, it is customary for Tekkiers to greet their family members, but not those outside one's family, by touching their elbows to theirs. Everyone follows this cultural practice [However, nobody is forced to follow this norm]. Once, there was a Tekkier who tried to tap elbows with someone outside of his family. People were stunned and very serious about it. This person was grounded for three months [Although people found this behavior a bit surprising, they did not find it unacceptable. Nobody wanted to blame him or punish this behavior]." A pilot study with a separate group of participants (N = 101) showed those in the tight condition (M = 5.44, SD = 0.64, 7-point Likert scale) were significantly more likely to perceive the culture of this community as tighter than those in the loose condition did (M = 2.63, SD = 1.47), $F(1, 99)$ = 156.79, p < .001, η_p^2 = .613 (see Supplementary Materials).

To measure social avoidance, the same six-item avoidance dimension of ATQ scale (Elliot & Trash, 2010) was slightly modified to fit the current context. Example items were, "As a Tekkier, I would be a very nervous person" and "As a Tekkier, it would not take much to make me worry" (1 = *not at all*, 7 = *very much so*). An overall social avoidance score was calculated by averaging the scores across items, with higher scores indicating stronger levels of avoidance motivation (a = .947).

Similar to previous studies, participants completed an eight-item modified dehumanization scale by Bastian et al. (2013). Example items were, "I feel that other Tekkiers are superficial, like they have no depth" and "I feel that other Tekkiers lack self-restraint, like animals." All responses were made on 7-point Likert scales (1 = *not at all*, 7 = *very much so*). An overall dehumanization score (a = .814) was calculated by averaging the items across these items, with higher scores indicating stronger levels of dehumanization. The order in which the items were presented within each scale was randomized. In addition, we counterbalanced the order in which social avoidance and dehumanization was measured across participants.

As a control measure, participants also indicated their current mood by responding to four items, including how positive/negative (R)/happy/sad (R) they felt at that moment. An overall mood score was calculated by averaging the scores across items, with higher scores corresponding to higher levels of positive mood (a = .849).

Results

Replicating the prior findings, participants in the tight condition (M = 4.08; SD = 1.01) reported higher levels of dehumanization than those in the loose condition did (M = 2.98; SD = 1.14), $F(1, 201)$ = 52.92, p < .001, η_p^2 = .208, 95% CI = [0.799, 1.393]. In addition, those in the tight condition (M = 5.01; SD = 1.53) also showed a higher level of social avoidance than those in the loose condition did (M = 3.03; SD = 1.67), $F(1, 201)$ = 77.83, p < .001, η_p^2 = .279, 95% CI = [1.540, 2.427]. Participants also felt less positive in

the tight condition (M = 4.97; SD = 1.51) than the loose condition did (M = 5.40; SD = 1.28), $F(1, 200)$ = 4.74, p = .031, η_p^2 = .023. Importantly, the effect of condition on dehumanization and social avoidance remained significant after controlling for mood, $F(1, 199)$ = 46.24, $p < .001$, η_p^2 = .189, 95% CI = [0.772, 1.312]; $F(1, 199)$ = 70.62, $p < .001$, η_p^2 = .262, 95% CI = [1.377, 2.222].

We conducted a mediation analysis to examine whether cultural tightness leads to dehumanization via social avoidance. As shown in Figure 3, condition (tight, loose) predicted social avoidance, as well as dehumanization. Similarly, social avoidance predicted dehumanization. When controlling for social avoidance, the effect of condition on dehumanization was reduced. A bootstrapped analysis (5000 re-samples) revealed the 95% confidence interval for the indirect effect did not include zero, $a*b$ = .227, SE = .045, CI = [.144 to .320]. These indicate dehumanization caused by cultural tightness was mediated by social avoidance motivation.

General Discussion

Putting people into a nonhuman or an infrahuman category seems to be a fundamental bias in how people perceive others that can further result in various detrimental social consequences, such as interpersonal indifference, aggression, and killing in extreme cases (Haslam & Loughnan, 2014). In the current research, we predicted that this bias could be amplified by one's social and cultural environment; that is, cultural tightness, which entails the strengths of social norms and severe punishments of deviate behaviors (Gelfand et al., 2011).

Six studies using a combination of different methods supported our prediction. Specifically, in Study 1, we employed archival and online search query data and showed that statewide variation in cultural tightness could positively predict statewide differences in dehumanization in the United States. In Study 2, through a historical textual analysis using time-series methods, we showed that historical variation in cultural tightness could predict time-lagged shifts in dehumanization from 1800 to 2000 CE. Study 3 conceptually replicated this finding. American employees in a tight corporate culture (i.e., finance) showed higher levels of dehumanization than those in a loose culture did (i.e., high tech). Studies 4–6 further employed controlled experiments to demonstrate a causal relationship. Using different manipulation methods, including placing people in a simulated tight culture (vs. a loose one, Studies 4 and 6) and temporarily shifting their support for cultural tightness (vs. cultural looseness, Study 5), tightness increased participants' level of dehumanization by causing them to attribute less humanness to others. Furthermore, the effect of tightness on dehumanization was found to be mediated by an avoidance motivation triggered by such an environment (Studies 5 and 6).

Our findings make significant contributions to the existing literature. First, the psychological consequences of cultural tightness, a concept with theoretical roots in multiple disciplines (e.g., Berry, 1967), have only started to gain scholars' attention over the last decade. To the best of our knowledge, empirical studies thus far have not systematically examined the ways in which cultural tightness shapes people's perceptions of others (except Jackson et al., 2019). Moreover, most studies on dehumanization

have focused on intra- and interpersonal precursors (Haslam & Loughnan, 2014). Our research suggests macro-level factors (e.g., social and cultural structure) can also play a crucial role in triggering dehumanization. Methodologically, this is the first study on dehumanization to use ecological data, both cross-sectionally (i.e., across the 50 states of America, Study 1) and longitudinally (i.e., across 200 years of U.S. history, Study 2). Together with quasi- (Study 3) and controlled experiments (Studies 4-6), we were able to show results that are high in external validity, causality, and underneath psychological processes.

It is argued that a tight culture is built to deal more effectively with ecological and human-made threats encountered by a society. Despite its effectiveness in dealing with crises, cultural tightness is not without psychological costs. In the present research, across six studies employing mixed methods (including using ecological data cross-sectionally and longitudinally, a quasi-experiment, and a series of controlled experiments), we have revealed that dehumanization (i.e., attributing less humanness to others) can be caused by one's cultural environment (i.e., tightness). In addition, such an effect is accounted for by one's avoidance motivation triggered by this culture.

Footnotes

1. We deleted two words that were significantly less searched, and as a result, we showed a research record for fewer than 15 states (i.e., "fun-loving," 6 states, and "broad-minded," 12 states). The words "active" and "disorganized" were also removed due to ambiguity in meaning and overlap with the definition of cultural tightness/looseness, respectively.

2. As a standard procedure (Google, 2021), Google Trends has already standardized the research volume of each target word, ranging from 0 to 100. In addition, for each word, Google Trends automatically marks the value for states with low search volume as "missing."

3. Due to the possibility of noise being introduced by the Covid-19 pandemic (which started to affect the United States in 2020), the ending time point for the GT query was set as December 31, 2019.

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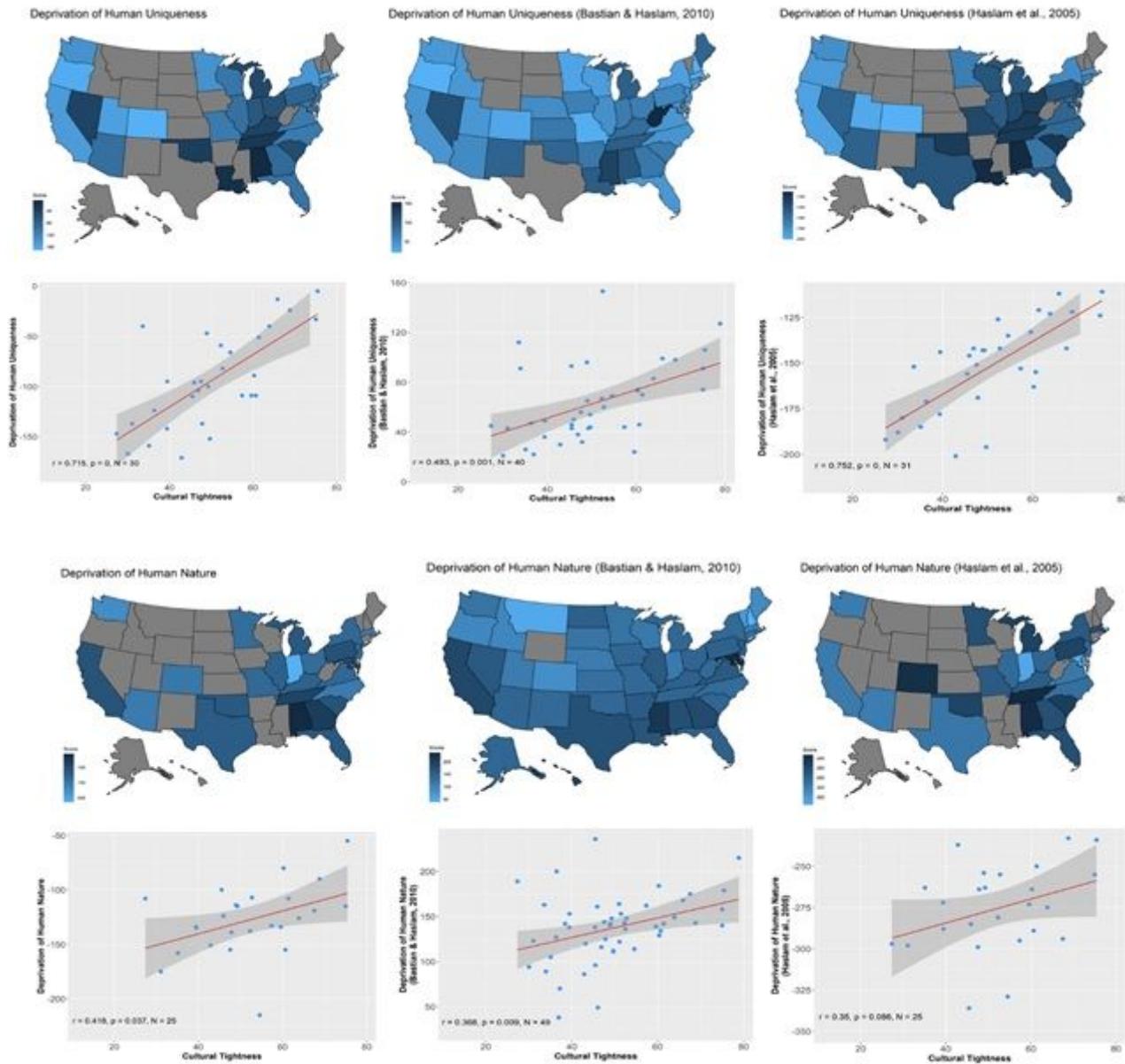
Figures

Figure 1

A. Upper part: geographical distribution of the use and research volume of human uniqueness words (from left to right: results by combing two scales; results using words from Bastian & Haslam's, 2010, scale; and results using words from Haslam et al.'s, 2005, scale). Darker colors indicate higher volumes. Grey suggests missing values. Lower part: corresponding scatter plots. B. Upper part: geographical distribution of the use and research volume of human nature words (from left to right: results by combing

two scales; results using words from Bastian & Haslam's, 2010, scale; and results using words from Haslam et al.'s, 2005, scale). Darker colors indicate higher volumes. Grey suggests missing values. Lower part: corresponding scatter plots.
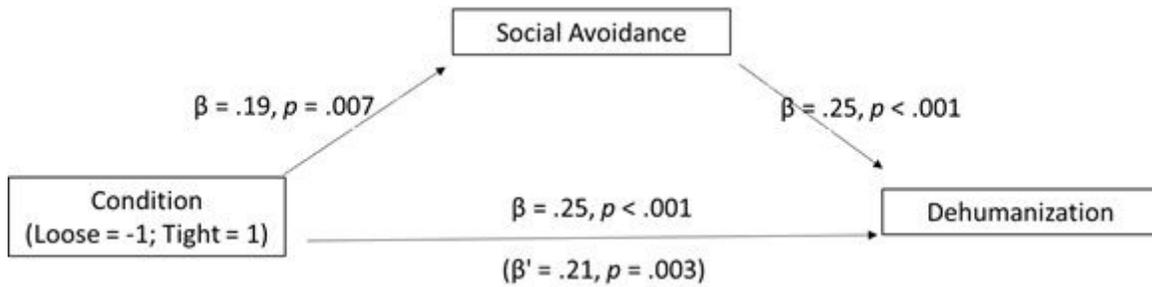

Figure 2

Mediation model for the effect of condition (tight vs. loose) on dehumanization via social avoidance (Study 5). Values for the indirect path (i.e., when controlling for the mediator) are shown in parenthesis.
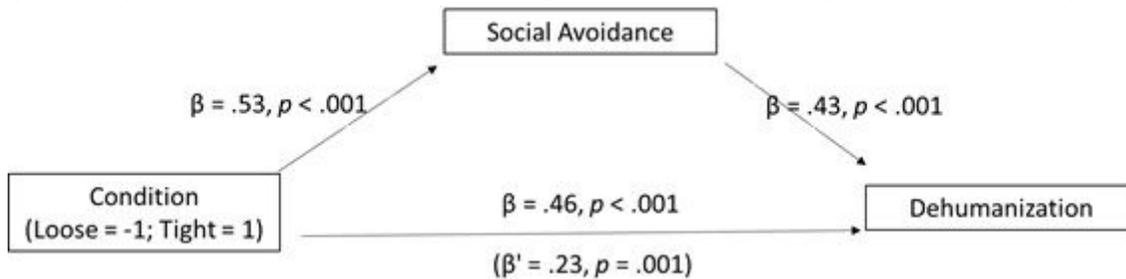

Figure 3

Mediation model for the effect of condition (tight vs. loose) on dehumanization via social avoidance (Study 6). Values for the indirect path (i.e., when controlling for the mediator) are shown in parentheses.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- SupplementaryMaterials.docx