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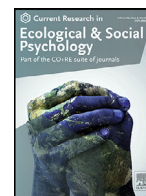
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Loosening the definition of culture: An investigation of gender and cultural tightness.



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ABSTRACT

To date, the study of cultural tightness has been largely limited to exploring the strictness of social norms and the severity of punishments at the level of nations or regions. However, cultural psychologists concur that humans gather cultural information from more than just their nationality. Gender is a cultural identity that confers its own social norms. Across three studies using multi-method designs, we find that American women feel the culture surrounding their gender is “tighter” than that for men, and that this relationship is mediated by perceived gender-related threats to the self. However, in a follow-up study in Singapore, we do not find measurement invariance, suggesting future work is necessary to refine the study of gender tightness cross-culturally. We close with an important discussion of understanding how tightness looks across a variety of cultural identities and introduce a novel, qualitative method for the study of the tightness of social norms within groups.

A key advancement in the study of culture has been the insight that cultures, often measured at the country-level, run on a continuum from tight to loose (Triandis, 1989). Tight cultures are characterized by strong norms and a low tolerance of deviance, whereas cultures that are loose have weaker norms and a high tolerance of deviant behavior. For example, Singapore is a tight culture, with strict rules and incredibly high penalties for violation. On the other hand, the US is a relatively loose culture with less severe consequences for most infractions (Gelfand et al., 2011).

Tightness is a group-level variable, tapping how individuals perceive the culture around them. In other words, an individual cannot be described as “tight” or “loose.” Items that measure tightness asks people to describe how much they think that their group (usually, their country) has tight norms or loose norms or how punitively people are punished if they break social norms. The tightness scale items include “There are many social norms that people are supposed to abide by in this country” and “In this country there are very clear expectations for how people should act in most situations” (Gelfand et al., 2011).

What predicts whether a group will have strict social norms? One of the best predictors of cultural tightness is a history of ecological and social threats. When cultures encounter threats, such as extended periods of warfare or a string of natural disasters, individuals establish more and

stronger social norms to weather the storm resulting in greater cultural tightness (Gelfand et al., 2011).

While tightness has mainly been investigated at the nation level, it has also been examined at other levels of analysis, such as US states. For example, Arizona, possibly because of its Southwest cultural history of rugged individualism, is fairly loose (Harrington and Gelfand, 2014). In addition to looking at country and US state variation, researchers have also shown that Chinese provinces (Chua et al., 2019), religious groups (Jackson et al., 2021), and social classes (Harrington, 2017) vary on the tightness-looseness continuum. This variation is usually seen as mediated by ecological and social threats.

If threat is a major predictor of tightness within a group, what other groups beyond battered nations or arid states might we expect to exhibit cultural tightness? We propose that one’s gender identity brings with it a set of cultural expectations and threats. Here, we define gender as the social roles prescribed to individuals, typically on the basis of sex (Walker and Cook, 1998). Importantly, we differentiate gender from sex—typically a binary, biological variable relevant to studies involving anatomy, genetics, and physiology (Johnson and Repta, 2012). Given that we are interested in identity, we focus our ideas, methods, and analyses on gender. Specifically, we theorize that women should show greater cultural tightness regarding their perception of their gender than men would, due to the different threats that men and women typically perceive themselves to face.

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Indeed, women may perceive themselves to face more threats than men do across several dimensions. They face disproportionate, immediate threats to their safety, resulting in feelings of vulnerability (Pantazis, 2000). Women are at greater risk of sexual assault (1 in 5 women versus 1 in 71 men; Smith et al., 2015). Other threats are financial—in 2014, women's annual income was 79% that of men (Blau and Kahn, 2017)—and social—women face more discrimination than men, which is linked to depression, lower self-esteem, and somatic symptoms like headaches (Belle and Doucet, 2003; Kobrynowicz and Branscombe, 1997). Importantly, these threats are *linked with* women's gender identity.

Undeniably, men also face unique threats due to their gender identity (Courtenay, 2000; Daly and Wilson, 1988). However, in addition to gender-specific threats, women, on average, appear to perceive more threat. Women demonstrate a great startle response to predictable and unpredictable threat than men (Burani and Nelson, 2020). Cross-culturally, women tend to report feelings of fear more than men (Brebner, 2003). In response to COVID-19, numerous studies have reported that women feel more threatened by the virus than men (Alsharawy et al., 2021; Broche-Pérez et al., 2020; Brooks et al., 2020). In sum, it appears that women, regardless of the domain of threat, appear more sensitive to threats within their environment.

Thus, we expect women to perceive their gendered culture as tighter than men's, based on this heightened perception of threat. Investigating this brings numerous potential benefits to the field of psychology and the world. First, it would demonstrate the practicality and value in studying tightness in other cultural groups, as has been done with individualism (Kashima et al., 1995). Additionally, understanding how different gender identities experience the world, especially regarding the threats they face and the unwritten rules they must follow, can help build empathy and improve cross-cultural communication—even if that cross-cultural barrier is a difference as commonplace as one's gender.

We conducted a series of four studies to develop a focused measurement of gender tightness, explore intergender differences, and discover the roots of these differences (perceived gender related threats). We close with a cross-cultural replication in Singapore to demonstrate validity of our scale in a tight culture. Finally, we discuss a novel methodology for testing cultural tightness, as well as the importance of measurement invariance when conducting cross-cultural research.

Study 1: measuring gender tightness and testing for differences

The goal of Study 1 was to develop a validated measure of tightness at the level of gender-identity as opposed to national-identity. Using the Cultural Tightness Scale (CTS) as a basis, we developed the Gender Tightness Scale (GTS) and administered the scale to 443 undergraduates.

Methods.

Participants. Undergraduate students were recruited for an hour-long survey via the website of a large southwestern public university and were paid \$20 for participation. Of 1226 participants who completed the entire survey, 809 participants endorsed identifying with either the male or female gender. This survey probed nine different identity types (e.g., gender, race) with a block of items for each of the nine identities. A block of items included several questions adapted to a particular identity type, including participants' sense of tightness-looseness for that type. To control survey length, participants were randomly assigned to a maximum of four identity blocks based on the identity types with which they identified. A participant who endorsed identifying with all nine identity types would be randomly assigned to four identity blocks, but if they endorsed three identity types, they would be randomly assigned to three identity blocks. The survey software randomly assigned 443 participants to the gender identity block (307 female, 136 male; $M_{\text{age}} = 19.76$, $SD_{\text{age}} = 1.61$; 209 White, 59 Latinx, 46 Asian, 13 Black,

15 South Asian, 9 Middle Eastern, 4 Native American, 81 Multiple, 2 other, 5 missing¹).

Procedure. As part of a longer survey, participants answered whether they identified with a gender and reported it with open response. 809 participants reported identifying with male or female; all others declined to respond or responded with another gender identity.

To reduce participant burden, we used a planned missing data approach whereby participants were randomly assigned to receive a fraction of the survey items, thus shortening the survey length. Given that data were Missing Completely At Random (MCAR), the use of full information maximum likelihood means there was no effect of this missingness on our analyses (Enders, 2010). At this point in the survey, 443 participants were randomly assigned to complete up to four blocks of questions for their gender identity. Included in these question blocks was a measure of cultural tightness-looseness adapted for the corresponding identity (male or female), which was administered with random assignment to four of the six items.

Measures. The cultural tightness-looseness scale (CTS (6)) was adapted to measure perceptions of tightness within the collective members of one's gender (see Appendix A).

Results.

Exploratory and Confirmatory Factor Analyses. An exploratory factor analysis of the six CTS items including both males and females found that the data did not fit the one-factor model very well if scored as usual ($\chi^2(9) = 67.19$, $p < .001$; RMSEA = .121; CFI = .814; TLI = .690). A two-factor solution displayed good statistical fit ($\chi^2(4) = 4.80$, $p = .308$; RMSEA = .021; CFI = .997; TLI = .990) but was uninterpretable. Both the reverse-coded Item 4 ("People of my gender have a great deal of freedom in deciding how they want to behave in most situations") and Item 6 ("People of my gender almost always comply with social norms") loaded poorly on the single factor, and so both items were removed in turn. Omitting either one of the reverse-scored items alone did not result in good model fit ($ps < .001$). Thus, we conducted a follow-up EFA with items 4 and 6 removed. A one-factor model fit the data well, $\chi^2(2) = 1.94$, $p = .38$; RMSEA < .001; CFI = 1.000; TLI = 1.001. Including Item 6 revealed poor model fit ($\chi^2(5) = 23.7$, $p < .001$; RMSEA = .092; CFI = .92; TLI = .839), supporting our acceptance of the four-item scale for gender. See Appendix 1 for all items.

Measurement Invariance. Using the abridged four-item scale, we tested whether the one-factor model measured the gender-related tightness construct equally well for males and females. The configural model showed good fit ($\chi^2(4) = 4.28$, $p = .37$; RMSEA = .018; CFI = .999; TLI = .996), suggesting a one factor solution in each group. There was no significant difference between the configural model and the metric invariance model (difference test $p = .32$), suggesting loadings were equivalent across groups. There was also no difference between the metric invariance model and the scalar invariance model (difference test $p = .33$; see Table 1), suggesting that the intercepts were equivalent across groups. This suggest that it is acceptable to compare observed means across groups.

Gender Tightness Comparisons. Women ($M = 4.46$, $SD = 1.00$) reported higher gender tightness than men ($M = 4.20$, $SD = 1.00$; $b = -.264$, 95% CI [-.466, -.062], $p = .01$) using the four-item GTS scale. Both scores indicate mean responses between slightly agree (4) and agree (5).

Study 2: measuring gender tightness through perceived norms

Study 2 used a novel qualitative approach to measuring tightness by having 248 undergraduate participants list as many gender-related norms as possible.

¹ Participants were asked to check all the races that apply. Counts for each specific race reflect those who checked only that race.

Table 1
Measurement Invariance Test Results from Study 1

Model	χ^2 (df)	<i>p</i>	CFI	RMSEA	Comparison	$\Delta\chi^2$ (Δ df)	Δp	Δ CFI
1. Configural	4.28(4)	.37	.999	.018	1 vs. 2	3.52(3)	.32	.003
2. Metric	7.79(7)	.35	.996	.023	2 vs. 3	3.47(3)	.32	.002
3. Scalar	11.26(10)	.34	.994	.024	1 vs. 3	6.99(6)	.33	.005

Table 2
Coding Scheme for Qualitative Norm Analysis

Category/Motive	Female Examples	Male Examples
Appearances	Wear makeup	Have a beard
Safety	Not walk alone at night	Ask for consent
Traits	Be polite	Be confident
Gender Roles	be feminine/be girly	be masculine/like boy stuff
Power	Be submissive to men	Protect women
Mating	Not be a "slut"	Have multiple sexual partners
Family	Be maternal	Protect family
Friendship	Have a lot of friends	Not have female friends
Work	Not work/National Service/Housework	Work/National Service/Provide for family
Disease Avoidance	Stay healthy	

Methods.

Participants. Out of a larger sample, 248 undergraduates (Female = 174, Male = 59, Gender Fluid = 1, Nonbinary = 1, No Response = 13) at a large university in the southwest completed a survey on gender in exchange for course credit.

Procedure. Participants were presented with the following instructions: "Take a moment to think about what norms and rules people of your gender are expect [sic] to follow, regardless of whether or not you follow them. You will be required to write for two minutes. Write as many norms as you can think of. Each sentence should start with "My gender should", with you filling in the rest of the blank. If you want to indicate that the norm is something you should NOT do, begin the blank by typing "not". This was followed by fifteen blanks for participants to complete. They were not required to complete every blank before proceeding (Appendix B).

Analysis. We began by excluding participants who did not indicate "Female" or "Male" as their gender. Next, two research assistants, blind to our hypotheses, independently reviewed the responses for nonresponse, nonsense, or failing to address the prompt. Any disputes were resolved with the first author. This left 144 responses (Female = 104, Male = 40). Next, each "norm" was coded for content. This coding scheme was based loosely on Fundamental Motives Theory (Kenrick et al., 2010) given that each motive presents a new threat to be managed: appearances, Safety, Traits, Power, Traditional Gender Roles, Romantic Relationships, Familial Relationships, Friendship, Workplace, Disease Avoidance, and Other/Unknown (see Table 2).

Results.

Gender Differences in Norm Reporting. To compare norms, we ran Welch's t-tests to compare norm reporting between men and women. On average, when asked to list gender-related norms, women reported 9.41 norms while men reported 7.23 norms ($t(63.52) = 2.71, p = .009$). Women reported more appearance-related norms ($t(109.38) = 8.61, p < .001$, difference = 1.71 norms, 95% CI [1.32, 2.10]), more Familial Relationships-related norms ($t(107.27) = 3.17, p = .002$, difference = .43 norms, 95% CI [.16, .70]), and more Romantic Relationship-related norms ($t(140.97) = 4.96, p < .0001$; difference = .57 norms, 95% CI [.34, .79]) (Figure 1). This result comports with the findings in Study 1, in that women perceive more gender related norms than men.

Study 3: threat as a mediator

Study 3 tested whether gender related threat would explain women's greater tightness than men, similar to the idea cultural tightness at the national/state level is driven by social and ecological threat (Gelfand

et al., 2011; Harrington and Gelfand, 2014). We measured participant's perceived threat against their gender in addition to the Gender Tightness Scale (GTS).

Methods.

Participants. Undergraduate psychology students were recruited to take a 30-minute survey in exchange for course credit. Once again, participants rated their identity with nine social categorizations which included gender. 308 identified with the male (76) or female (231) gender ($M_{age} = 18.94, SD = 1.76$; 159 White, 42 East Asian/Pacific, 30 Latinx, 18 South Asian, 7 Middle Eastern, 4 Black, 46 Multiple/other, 1 missing).

Procedure. Participants completed the focal measures as part of a longer online survey in the location of their choice. Germane to this study, they endorsed identification with a gender and reported it as an open response. They also completed the same gender tightness looseness scale from Study 1. Finally, participants completed a measure of general intergroup threat that was adapted to gender, using a Likert scale running from 1(Strongly disagree) to 7 (Strongly agree) (Cottrell et al., 2010). They were instructed to "Please think about the genders male and female. If you identify with one of these genders, answer the following items about the members of the other gender. So, if you are female, answer these items regarding males in general. If you are male, answer them with regard to females. "The other gender, as a group..." "poses a threat to my gender group," "takes economic resources away from my gender group," "limits the economic resources available to my gender group," "possesses values that directly oppose those of my gender group," "hold values that are morally inferior to those of my gender group," and "endangers the physical safety of my gender group."

Results.

Confirmatory Factor Analysis. A confirmatory factor analysis conducted with FIML revealed that the one-factor structure from Study 1 fit the GTS data well ($\chi^2(2) = 1.79, p = .41$; RMSEA < .001; CFI = 1.00; TLI = 1.01).

Replication of Gender Difference and Mediation by Threat. A model with the gender threat measure mediating the gender differences in tightness-looseness was fit, using FIML to account for missing data, and 5,000 bootstrapped samples to estimate the indirect effect. The gender difference in tightness-looseness was replicated as a total effect ($\beta = .121, 95\% CI [.015, .227], p = .023$), such that women reported higher gender tightness. We also found a significant indirect effect through gender threat ($\beta = .078, 95\% CI [.017, .141], p = .013$), controlling for which rendered the direct effect non-significant ($\beta = .043 [-.083, .16], p = .489$). This suggests gender differences in threat significantly mediated the observed gender differences in tightness.

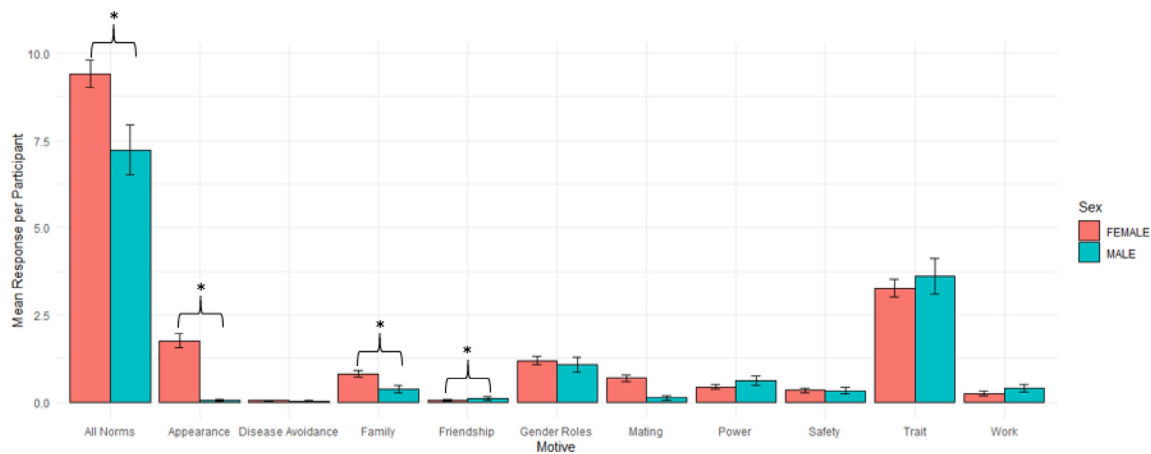


Fig. 1. Gender norms in the United States

Study 4: cross-cultural replication in a Singapore, a tight society

Study 4 attempted to replicate the findings of the previous three studies in a tight society (Singapore) using a university sample. Per Gelfand et al. (2011), Singapore scored higher on the tightness scale than the world average and higher than the United States, which is slightly below average on tightness.

Methods.

Participants. Undergraduate students at a large Singaporean university completed a survey about gender experiences in exchange for \$5.00 US. The survey was approved by university ethics committees in the USA and Singapore. Our original sample size was 261 participants. In lieu of an attention check, responses that took from 10-60 minutes and completed more than 90% of the survey were retained as the final sample ($N = 237$; 112 Males, 125 Females; $M_{\text{age}} = 22.30$, $SD = 2.13$; 202 Chinese, 24 Indian, 4 Malay, 6 Others).

Procedure. After giving consent, participants completed a survey of gender related psychological measures that was expected to take about 25 minutes, after which they were debriefed, thanked, and paid.

Measures. The relevant measures were identical to previous studies (GTS, Gender Norm Perception Task), though we administered all six gender tightness items to each participant, rather than using the planned missing data approach from previous studies.

Results.

Measurement Invariance. There was no evidence of measurement invariance using the four-item scale, or permutations that included the previously removed items. For the four-item scale, the configural ($\chi^2(4) = 28.69$, $p < .0001$, $RMSEA = .222$, $CFI = .871$, $TLI = .614$, $SRMR = .064$), metric ($\chi^2(7) = 34.80$, $p < .0001$, $RMSEA = .178$, $CFI = .855$, $TLI = .751$, $SRMR = .09$), and scalar ($\chi^2(10) = 49.74$, $p < .0001$, $RMSEA = .178$, $CFI = .793$, $TLI = .751$, $SRMR = .102$) models all revealed poor fit to the data. A one-factor model that ignored gender did not fit the data well either ($\chi^2(2) = 23.05$, $p < .0001$, $RMSEA = .205$, $CFI = .884$, $TLI = .652$, $SRMR = .055$). These findings precluded any potential interpretation of mean differences.

Gender Differences in Norm Reporting. Unlike in the US, Singaporean participants did not differ in the number of norms they reported by gender ($t(244) = 2.00$, $p = .10$, difference = .77 norms, 95% CI [-.15, 1.70]). However, we also explored the differences in the kinds of norms reported by the two genders. There was a significant difference in the reporting of certain norms across genders such that Singaporean females reported less trait-based norms ($t(199) = -5.00$, $p < .01$, difference = 3.18 norms, 95% CI [1.82, 4.53]), more friend-related norms ($t(159) = 3.00$, $p < .01$, difference = .11 norms, 95% CI [.03, .19]), appearance-related norms ($t(255) = 7.00$, $p < .01$, difference = 2.08 norms, 95% CI [1.46, 2.69]), gender role-related norms ($t(247) = 2.00$,

$p = .04$, difference = 1 norm, 95% CI [.04, 1.96]), more safety norms ($t(169) = 4.00$, $p < .01$, difference = .60 norms, 95% CI [.29, .91]), and more work-related norms ($t(247) = 3$, $p < .01$, difference = .80 norms, 95% CI [.21, 1.38]) (Figure 2).

Discussion

Across hundreds of US participants, we found robust evidence for a difference in perceived tightness and looseness across men and women, such that women perceived greater tightness using a modified, 4 item scale and qualitatively reported more gender norms for themselves (Studies 1-2). Further, in line with ideas about tightness functioning to manage threat, we found that gender-specific threats mediated the relationship between gender and tightness (Study 3). This is in line with previous work which has suggested the broader adaptive purpose of cultural tightness is to manage environmental and social threats to the group. However, here we apply this to gender within a given society in a novel way.

We attempted to replicate in a tight country, Singapore. We had thought perhaps national tightness might moderate the relationship between gender and tightness, such that a gender difference might appear in relatively loose cultures (like the US) but not in a culture in which there are very tight norms for everyone (like Singapore). We could not explore these novel questions because of bad model fit and a lack of measurement invariance. Once the measurement is sorted out in future work, we think that will open questions of how individuals, with their many cultural identities, manage competing expectations and prioritize certain parts of their identity (say, national identity) over others (like gender).

Other cultural dimensions may provide insight as to why Singaporean men and women reported similar numbers of norms in an open-ended prompt. Gender egalitarianism which varies by country is (somewhat paradoxically) known to increase gender differences since the equality allows the genders to pursue their different, respective goals (Schwartz and Rubel-Lifschitz, 2009). Singapore is higher than the United States on egalitarianism (Schwartz, 2007), suggesting that we should expect Singapore to have larger differences in gender norms than the United States. An interesting future direction would examine gender and tightness in societies that vary in gender equality and in tightness at the national level; we propose an interesting set of comparisons could be New Zealand (relatively loose, relative gender equality), Ukraine (relatively loose, relative gender inequality), Austria (relatively tight, relative gender equality), and India (relatively tight, relative gender inequality) (Gelfand et al., 2011; Schwartz, 2007). Do women report greater feelings of tightness in unequal societies? Do they report differences in the kinds of norms they must follow in comparison to men?

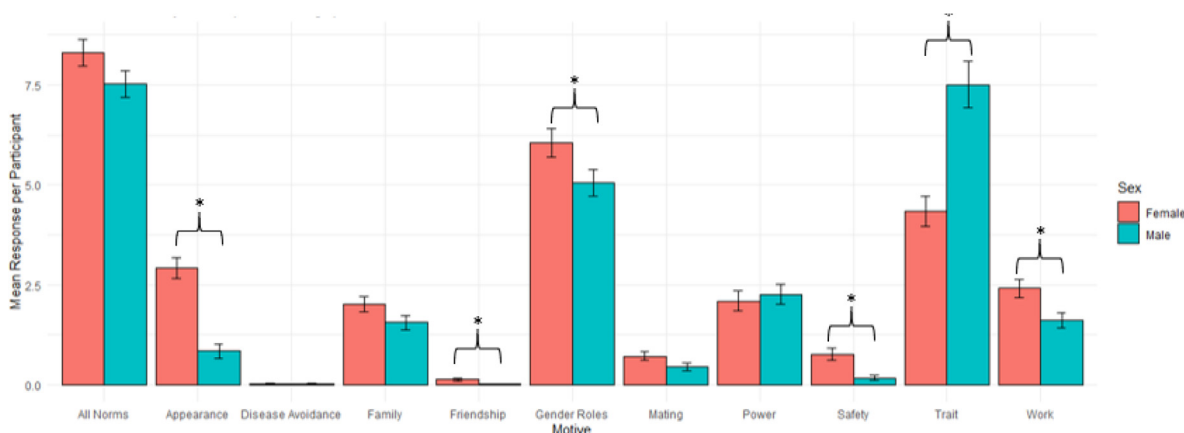


Fig. 2. Gender norms in Singapore.

Additionally, our work presents a new qualitative method for studying cultural tightness. In having participants record social norms, we gain not only a proxy for the cognitive accessibility of social norms in their mind, but the content of these norms. This allows us to further dive into what threats are managed by social norms, revealing a cross-cultural convergence upon the importance of affiliation and appearance-related norms for women especially. Thus, we add yet another measure to the growing number of ways to capture perceptions of social norms and cultural tightness (Mu et al., 2015; Uz, 2015).

Theoretically, the most exciting prospect this line of research offers is the idea that tightness varies across different cultural identities, with identity-related threat as a mediator. What other differences might we then expect? Do African-Americans or other minority ethnic groups report tighter cultural norms than their White counterparts (US Census Bureau, 2019)? Do Jewish people, who have historically faced immense religious persecution (Phillips, 2018), have tighter norms than Christians do? Is a long history of threats needed to shape norm tightness or can tightness be affected by recent current threats to identity (e.g., a wave of hate crimes)? Do transgender individuals, who face four times the amount of violent crime as cisgender ones (Rude, 2021), have tighter in-group norms? Further, since threat influences cultural tightness, might norms be specific to the domain of threat? For example, in an environment where women outnumber men, might men face stricter mating norms (Bleu et al., 2012)?

Beyond replicating in other countries, gender differences in cultural tightness should be investigated from a more representative sample because student participants may not be entirely representative of the population. The consistent evolution of gender norms in developed countries means that generational, and perhaps social class, differences are likely to exist. Further, these studies cannot rule out the fact that women may overperceive norms in comparison to men. Is the observed difference in gender tightness due to a difference in sensitivity to threat or differences in actual threats? There is reason to think it may be beneficial for women to be especially attuned to the social landscape and the rules within it, in the same way they seem attuned to threat (Brebner, 2003; Burani and Nelson, 2020). To rule this out, women could be compared to men in their reporting of norms within other cultural contexts, like the workplace or the nation.

The tightness-looseness continuum represents an exciting trait of cultural groups that lie outside the traditional conception of “culture.” Through a mixed-method design, we establish that while other cultural groups may differ on these traits, special attention must be paid to measurement and the proper application of scales across group types. We leave the reader with two tools for continuing the study of gender and tightness—the GTS and the Gender Norm Perception Task—and further it beyond gender to other cultural identities.

Author contributions

Conceptualization – ASW, MS, ABC

Analysis – MS, KG, ASW

Funding – ASW, ABC

Investigation – ASW, MS, NPL, BC, ABC

Administration – ASW, MS, ABC

Supervision – KG, NPL, ABC

Writing – ASW, MS, ABC

All authors reviewed and approved the final draft of this manuscript.

Declaration of Competing Interest

Given their role as a Editorial Board member, Cohen A.B. had no involvement in the peer-review of this article and had no access to information regarding its peer-review. All other authors have declared that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability

All data and code used for these analyses is available at <https://osf.io/r2um7/>.

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Appendix A – Gender Tightness Scale

Adapted from Gelfand et al., 2011

Instructions: “Please respond to the following items with respect to your GENDER identity. Indicate the extent to which you agree or disagree with each statement.”

Scale: 1 (Strongly Disagree) – 7 (Strongly Agree)

Item 1: There are many social norms that people of my gender are supposed to abide by.

Item 2: There are very clear expectations for how people of my gender should act in most situations.

Item 3 :People of my gender agree upon what behaviors are appropriate versus inappropriate.

Item 4: People of my gender have a great deal of freedom in deciding how they want to behave in most situations. (Reverse coded; not included in GTS)

Item 5: If someone of my gender acts in an inappropriate way, others of my gender will strongly disapprove

Item 6: People of my gender almost always comply with social norms. (not included in GTS)

Appendix B – Gender Norm Perception Task

Instructions: Take a moment to think about what norms and rules people of your gender are expected to follow, regardless of whether or not you follow them. You will be required to write for two minutes. Write as many norms as you can think of. Each sentence should start with “My gender should”, with you filling in the rest of the blank. If you want to indicate that the norm is something you should NOT do, begin the blank by typing “not”.

This was followed by fifteen blanks for participants to complete. They were not required to complete every blank before proceeding.

References

- Alsharawy, A., Spoon, R., Smith, A., Ball, S., 2021. Gender Differences in Fear and Risk Perception During the COVID-19 Pandemic. *Frontiers in Psychology* 12, 3104. doi:10.3389/fpsyg.2021.689467.
- Belle, D., Doucet, J., 2003. Poverty, Inequality, and Discrimination as Sources of Depression Among U.S. Women. *Psychology of Women Quarterly* 27 (2), 101–113. doi:10.1111/1471-6402.00090.
- Blau, F.D., Kahn, L.M., 2017. The Gender Wage Gap: Extent, Trends, and Explanations. *J. Econ. Lit.* 55 (3), 789–865. doi:10.1257/jel.20160995.
- Bleu, J., Bessa-Gomes, C., Laloi, D., 2012. Evolution of female choosiness and mating frequency: Effects of mating cost, density and sex ratio. *Anim. Behav.* 83 (1), 131–136. doi:10.1016/j.anbehav.2011.10.017.
- Brebner, J., 2003. Gender and emotions. *Personality and Individual Differences* 34 (3), 387–394. doi:10.1016/S0191-8869(02)00059-4.
- Broche-Pérez, Y., Fernández-Fleites, Z., Jiménez-Puig, E., Fernández-Castillo, E., Rodríguez-Martin, B.C., 2020. Gender and Fear of COVID-19 in a Cuban Population Sample. *International Journal of Mental Health and Addiction* doi:10.1007/s11469-020-00343-8.
- Brooks, S.K., Webster, R.K., Smith, L.E., Woodland, L., Wessely, S., Greenberg, N., Rubin, G.J., 2020. The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. In: *Lancet North Am. Ed.*, 395, pp. 912–920. doi:10.1016/S0140-6736(20)30460-8.
- Burani, K., Nelson, B.D., 2020. Gender differences in anxiety: The mediating role of sensitivity to unpredictable threat. *Int. J. Psychophysiol.* 153, 127–134. doi:10.1016/j.ijpsycho.2020.05.001.
- Chua, R. Y. J., Huang, K. G., & Jin, M. (2019). Mapping cultural tightness and its links to innovation, urbanization, and happiness across 31 provinces in China. *Proceedings of the National Academy of Sciences*, 116(14), 6720–6725. https://doi.org/10.1073/pnas.1815723116
- Cottrell, C.A., Richards, D.A.R., Nichols, A.L., 2010. Threat Perception Measure. *J. Exp. Soc. Psychol.* 46 (2), 247–254. doi:10.1037/t17442-000.
- Courtenay, W.H., 2000. Engendering health: A social constructionist examination of men's health beliefs and behaviors. *Psychology of Men & Masculinity* 1 (1), 4–15. doi:10.1037/1524-9220.1.1.4.
- Daly, M., Wilson, M., 1988. *Homicide: Foundations of Human Behavior*. Routledge doi:10.4324/9780203789872.
- Enders, C.K., 2010. *Applied Missing Data Analysis*. Guilford Press.
- Gelfand, M.J., Raver, J.L., Nishii, L., Leslie, L.M., Lun, J., Lim, B.C., Duan, L., Almaliah, A., Ang, S., Arnadottir, J., Aycan, Z., Boehnke, K., Boski, P., Cabecinhas, R., Chan, D., Chhokar, J., D'Amato, A., Ferrer, M., Fischlmayr ..., I.C., Yamaguchi, S., 2011. Differences Between Tight and Loose Cultures: A 33-Nation Study. *Science* 332 (6033), 1100–1104. doi:10.1126/science.1197754.
- Harrington, J.R., 2017. *Worlds Unto Themselves: Tightness-Looseness and Social Class*. University of Maryland.
- Harrington, J. R., & Gelfand, M. J. (2014). Tightness–looseness across the 50 united states. *Proceedings of the National Academy of Sciences*, 111(22), 7990–7995. https://doi.org/10.1073/pnas.1317937111
- Jackson, J.C., Caluori, N., Abrams, S., Beckman, E., Gelfand, M., Gray, K., 2021. Tight cultures and vengeful gods: How culture shapes religious belief. *Journal of Experimental Psychology: General* doi:10.1037/xge0001033.
- Johnson, J.L., Repta, R., 2012. *Sex and Gender Beyond the Binaries. Designing and conducting gender, sex, and health research*.
- Kashima, Y., Yamaguchi, S., Kim, U., Choi, S.-C., Gelfand, M.J., Yuki, M., 1995. Culture, gender, and self: A perspective from individualism-collectivism research. *J. Pers. Soc. Psychol.* 69 (5), 925–937. doi:10.1037/0022-3514.69.5.925, http://dx.doi.org.ezproxy1.lib.asu.edu/.
- Kenrick, D.T., Griskevicius, V., Neuberg, S.L., Schaller, M., 2010. Renovating the Pyramid of Needs: Contemporary Extensions Built Upon Ancient Foundations. *Perspectives on Psychological Science* 5 (3), 292–314. doi:10.1177/1745691610369469.
- Kobrynovicz, D., Branscombe, N.R., 1997. Who Considers Themselves Victims of Discrimination?: Individual Difference Predictors of Perceived Gender Discrimination in Women and Men. *Psychology of Women Quarterly* 21 (3), 347–363. doi:10.1111/j.1471-6402.1997.tb00118.x.
- Mu, Y., Kitayama, S., Han, S., & Gelfand, M. J. (2015). How culture gets embrained: Cultural differences in event-related potentials of social norm violations. *Proceedings of the National Academy of Sciences*, 112(50), 15348–15353. https://doi.org/10.1073/pnas.1509839112
- Pantazis, C., 2000. Fear of Crime”, Vulnerability and Poverty. *Br. J. Criminol.* 40 (3), 414–436. doi:10.1093/bjc/40.3.414.
- Phillips, G., 2018, February 27. Antisemitism: How the origins of history's oldest hatred still hold sway today. *The Conversation* <http://theconversation.com/antisemitism-how-the-origins-of-historys-oldest-hatred-still-hold-sway-today-87878>.
- Rude, M., 2021, March 23. Trans People Four Times as Likely to Face Violent Crime as Cis. *Advocate* <https://www.advocate.com/crime/2021/3/23/trans-people-four-times-likely-face-violent-crime-cis>.
- Schwartz, S.H., 2007. Value Orientations: Measurement, Antecedents and Consequences Across Nations. In: Jowell, R., Roberts, C., Fitzgerald, R., Eva, G. (Eds.), *Measuring Attitudes Cross-Nationally*. SAGE Publications, Ltd, pp. 169–203. doi:10.4135/9781849209458.n9.
- Schwartz, S.H., Rubel-Lifschitz, T., 2009. Cross-national variation in the size of sex differences in values: Effects of gender equality. *J. Pers. Soc. Psychol.* 97 (1), 171–185. doi:10.1037/a0015546.
- Smith, S.G., Zhang, X., Basile, K.C., Merrick, M.T., Wang, J., Kresnow, M., Chen, J., 2015. The National Intimate Partner and Sexual Violence Survey (NISVS): 2015 Data Brief – Updated Release. *National Center for Injury Prevention and Control, Centers for Disease Control and Prevention*, p. 32.
- Triandis, H.C., 1989. *The Self and Social Behavior in Differing Cultural Contexts*. *Psychol. Rev.* 96 (3), 506–520.
- Census Bureau, US, 2019. *U.S. Census Bureau QuickFacts: United States*. US Census Bureau <https://www.census.gov/quickfacts/fact/table/US/PST045219>.
- Uz, I., 2015. The Index of Cultural Tightness and Looseness Among 68 Countries. *Journal of Cross-Cultural Psychology* 46 (3), 319–335. doi:10.1177/0022022114563611.
- Walker, P.L., Cook, D.C., 1998. Brief communication: Gender and sex: Vive la difference. *Am. J. Phys. Anthropol.* 106 (2), 255–259. doi:10.1002/(SICI)1096-8644(199806)106:2<255::AID-AJPA11>3.0.CO;2-#.