Supplementary Materials for

Levels of Interpersonal Trust across Different Types of Environment: The Micro-Macro Interplay between Relational Distance and Human Ecology

This PDF file includes:

Supplementary Text

Study 1

Literature Search and Criteria for Study Inclusion

Meta-analyzed studies were obtained by searching the databases of *PsycINFO*, *Web of Science*, and *Google Scholar* (end date: February, 2015). Keywords including "trust", "cultural differences", "cross-cultural differences", and "game" (may use the name of a specific social dilemma game related to trust, such as "the trust game") were used. Additional articles and datasets were obtained from the reference lists of any analyzed articles or relevant reviews.

Thirty empirical studies involving cross-cultural comparisons between 5 Anglo countries (i.e., the U.S.A., Canada, U.K., Australia, and New Zealand) and 6 Confucian-influenced countries/regions (i.e., Mainland China, Japan, Korea, Singapore, Taiwan, and Hong Kong) were included for meta-analysis. We also included seven mono-culture studies that have been used in cross-cultural comparisons (Dreber et al., 2008; Ishii & Kurzban, 2008; Kim & Son, 1998; Kurzban et al., 2001; Wu et al., 2009; Yamagishi, 1986, 1988). More specifically, we matched mono-culture data from these studies that implemented the same trust measure as had been used in an Anglo country or in a Confucian Asian country. Together, data from 34 samples for attitudinal surveys and 19 samples for behavioral game studies (Anglo N = 15,281; Confucian N = 16,226) were included in the current analysis.

Operationalization of Interpersonal Trust

Studies included for meta-analysis utilized different trust measurements. Table S1 summarizes how interpersonal trust was operationalized in each measurement.

Coding Description of Included Studies

Tables S2-S5 display coding information of each included study, for attitudinal studies and behavioral studies, and for trust in unfamiliar persons (distant others) and in familiar persons (intermediate others and close others), separately.

Effect Size Calculation

In the literature, effect sizes are popularly assessed by Cohen's d (Cohen, 1969), which estimates population standardized mean difference between the treatment group and the control group. But d tends to overestimate mean differences in small samples. To correct this bias, Hedges (1981) developed a g index as an unbiased estimation of the population standardized mean difference. In the current meta-analysis, all effect sizes were measured by Hedges' g.

To calculate Hedges' g, Anglo samples were considered the treatment groups, whereas Confucian samples were considered the control groups. A positive effect size indicates that Anglo peoples have a higher level of trust than Confucian Asians, whereas a negative effect size

indicates that Confucian Asians have a higher level of trust than Anglo peoples. With regard to continuous data, *g* was calculated based on group means, standard deviations, and sample sizes. With regard to dichotomous data, *g* was converted from the calculated odds ratio (Fleiss & Berlin, 2009). When the descriptive statistics were not available, g was converted from other inferential statistics, including statistics from *t*-tests and *F*-tests (Borenstein, 2009).

Dependent Effect Sizes Correction

Some included studies involved cross-national comparisons between multiple treatment groups and a common control group (e.g., Americans vs. Chinese and Canadian vs. Chinese, from the same study), or between overlapping treatment groups and control groups (e.g., Americans vs. Chinese and Canadian vs. Chinese, as well as Americans vs. Koreans and Canadian vs. Koreans, from the same study). In this case, the derived effect sizes are correlated with each other, and thus violate the independence assumption for meta-analysis. To correct for this dependence, we followed Gleser and Olkin's (1994, 2009) recommendation, aggregating effect sizes within the same studies. Our aggregation was based on an estimation of within-study effect size correlation at the level of $r = .50$. This correlation coefficient is the expected magnitude, if the treatment groups and the control groups have equal sample sizes (Borenstein et al., 2009).

We also corrected dependent effect sizes when comparing different types of trust or trust measurement. For instance, Zhang and Bond (1993) used a within-subject design to measure American, Hongkongese, and Mainland Chinese participants' attitudinal trust in their close others, acquaintances, and distant others. For the analysis of trust in strangers vs. acquaintances vs. close others, only data concerning trust in close others were selected from Zhang and Bond's study, given the limited number of included studies that assessed trust within different types of close relationships. Another example is Miller and Mitamura's (2003) study where participants completed both Likert-scale and binary-scale surveys of stranger trust. The effect sizes were similar between the two types of measurement ($g = .39$ vs. $g = .44$). We kept the Likert-scale data in the analysis of the responding scale; inclusion or exclusion of the binary-scale data did not substantially change our meta-analytic results.

Effect Size Information for Included Studies

Table S6 displays effect size information for each included study. For studies having dependent effect sizes, the aggregated effect sizes are present in the table.

Test of Publication Bias

Method. We used two different methods to detect the presence of publication bias, including the conventional funnel plot tests and a more recently developed p-curve test.

The funnel plot is a scatterplot of studies' effect sizes against their precision (e.g., standard errors). Funnel plot asymmetry, with a lack of studies having small effect sizes and low precision (large standard errors), may indicate the presence of publication bias that suppresses small and non-significant effects (Sutton, 2009; van Assen et al., 2015). Egger and his colleagues developed the regression method to statistically test the asymmetry of funnel plot (Egger et al., 1997; Sterne et al., 2005), and Duval and Tweedie (2000) developed the trim-and-fill method to assess the impact of this asymmetry. These tests were performed using R software's meta-analysis packages as described in the main text.

Alternatively, the p-curve plot is a graph that displays the distribution of studies' significant p-values (< .05). The p-curve test examines the shape of p-curve, with the assumption that the distribution of p-values should be right-skewed (e.g., more .01s than .04s) if there exists a true effect and researchers do not selectively report results with p-values just below the .05 level (Simonsohn et al., 2014; Simonsohn et al., 2015). It has been argued that the p-curve test of publication bias can address limitations of conventional funnel plot tests including low statistical power and sometimes false positive results (Simonsohn et al., 2014; van Assen et al., 2015). The p-curve test of publication bias was performed using the official online application (v.4.052; http://www.p-curve.com/app4/) developed by Simonsohn and his colleagues.

Results. With respect to attitudinal studies, the regression test of funnel plot asymmetry did not find the presence of publication bias across all unfamiliar-person-trust surveys (z = -.41, p > .250) and across all familiar-person-trust surveys (z = .38, p > .250). Likewise, the p-curve test found that the distributions of available significant p-values were right-skewed for both types of studies (unfamiliar-person trust: half p-curve z = -11.49, p < .001; familiar-person trust: z = -8.11, p < .001), indicating the absence of publication bias.

With respect to behavioral studies, the regression test detected funnel plot asymmetry for both unfamiliar-person-trust games (z = 4.89, p < .001) and familiar-person-trust games (z = -4.93, p < .001), indicating potential publication bias. However, the trim-and-fill test suggested that this potential bias had limited impact; after adjusting for the asymmetry, the corrected average effect sizes were g = .46, p = .002, 95% CI = [.16, .76] for unfamiliar-person-trust games and g = .08, p > .250, 95% CI = [-.23, .39] for familiar-person-trust games, neither of which alter our conclusions. In addition, the p-curve test of available significant p-values did not find evidence of publication bias for either type of study (unfamiliar-person trust: half p-curve z = -6.99, p < .001; familiar-person trust: z = -3.24, p < .001).

Study 2

Development and Validation of Survey Scales

Interpersonal Trust Scale. Three subscales were originally constructed, including trust in the partner's intentions, trust in the partner's competence, and trust in the partner's dependability. Items were partly adapted from the extant Western trust scales (Johnson-George & Swap, 1982; Rempel et al., 1985), while considering their suitability for use in Confucian cultures.

We first tested this scale in the U.S.A. and China. Exploratory analyses revealed that the three subscales were highly correlated in both countries, suggesting an uni-dimensional construct. As a result, we shortened the scale, and only retained 4 items from the intention subscale (e.g., "*I am confident that this person would never harm me.*"), 1 item from the competence subscale ("*I am confident in this person's ability to keep his/her word.*"), and 1 item from the dependability subscale ("*I am able to count on this person in times of need.*"). We then tested this shortened 6-item scale in Japan. Appendix of this section includes all final items.

Cross-Cultural Measurement Invariance. Using Mplus 7.0 (Muthén & Muthén, 2012), a multiple-group confirmatory factor analysis (CFA) tested the three levels of measurement invariance for this single-factor trust measure (6 items). Given that participants evaluated their interpersonal trust repeatedly at three levels of relational distance, we correlated the error terms between these evaluations in the CFA (Little, 2013). First and foremost, the analysis confirmed the configural invariance (i.e., the same factor structure) for this questionnaire in all three countries. The fit statistics were χ^2 (676.07)/*df* (342) = 1.98, CFI = .941, RMSEA = .085, SRMR = .050, against the recommended cut-offs CFI ≥ .90, RMSEA < .10, and SRMR ≤ .80 (Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999).

Second, the analysis also confirmed the metric invariance (i.e., similar factor loadings) for this questionnaire in all three countries. The fit statistics were χ^2 (743.33)/*df* (372) = 2.00, CFI = .934, RMSEA = .086, SRMR = .069 (ΔCFI = .007, ΔRMSEA = .001, ΔSRMR = .019, compared to configural invariance model), against the recommended cut-offs ΔCFI ≤.010, supplemented by ΔRMSEA ≤ .015 or ΔSRMR ≤ .030 (Chen, 2007).

Finally, the analysis confirmed that the majority of the 6 items achieved scalar invariance (i.e., similar item intercepts) in all three countries. The fit statistics were χ^2 (816.27)/*df* (390) = 2.09, CFI = .924, RMSEA = .090, SRMR = .076 (ΔCFI = .010, ΔRMSEA = .004, ΔSRMR = .007, compared to metric invariance model), against the recommended cut-offs ΔCFI ≤ .010, supplemented by ΔRMSEA ≤ .015 or ΔSRMR ≤ .010 (Chen, 2007).

Taken together, these results suggested that our single-factor trust measure was cross-culturally comparable for both correlation/regression analyses and mean comparisons (Chen, 2008).

Criterion Scales. Based on a literature review, we identified emotional closeness (intimacy) and the willingness to help/share as two criteria for close and trusting relationships (McAllister, 1995; Wieselquist et al., 1999; Williamson, 1993). Two shorter scales (4 items each) were constructed based on the existing measures in the Western interpersonal world and in the East Asian interpersonal world (Jing, 2009; Lau, 2005; Sternberg, 1997). We first tested these two scales in the U.S.A. and China, validating its two-factor structure and predictive relationships with other measures, such as the Inclusion of Other in the Self (IOS) scale (Aron, Aron, & Smollan, 1992), and the dictator game. We then tested these two scales in Japan. Appendix of this section includes all final items.

Cross-Cultural Measurement Invariance. A multiple-group CFA was conducted on the two scales across all three levels of relational distance. First and foremost, the analysis confirmed the configural invariance for the two-factor structure in all three countries. The fit statistics were χ^2 (1095.62)/*df* (639) = 1.71, CFI = .932, RMSEA = .073, SRMR = .061, against the recommended cut-offs CFI ≥ .90, RMSEA < .10, and SRMR ≤ .80.

Second, the analysis also confirmed that the majority of the 8 items achieved metric invariance in all three countries. The fit statistics were χ^2 (1183.46)/*df* (663) = 1.78, CFI = .922, RMSEA = .076, SRMR = .071 (ΔCFI = .010, ΔRMSEA = .001, ΔSRMR = .010, compared to configural invariance model), against the recommended cut-offs ΔCFI ≤ .010, supplemented by ΔRMSEA ≤ .015 or ΔSRMR ≤ .030.

Finally, the analysis confirmed that the majority of items for the willingness to help/share achieved scalar invariance in all three countries. The fit statistics were χ^2 (1223.12)/*df* (675) = 1.81, CFI = .918, RMSEA = .077, SRMR = .073 (ΔCFI = .004, ΔRMSEA = .001, ΔSRMR = .002, compared to partial metric invariance model), against the recommended cut-offs ΔCFI ≤.010, supplemented by ΔRMSEA ≤ .015 or ΔSRMR ≤ .010. On the other hand, items for emotional closeness failed to achieve scalar invariance in all three countries. Further inspections indicated that the latent means for emotional closeness with close others seemed to be largely underestimated for American participants.

Taken together, these results suggested that the two criterion scales were cross-culturally comparable for correlation/regression analyses, but the scale of emotional closeness was not comparable for mean comparisons (Chen, 2008). As a result, we only used these scales for correlational analyses that validate trust measures' predictive power.

Manipulation Check

As a manipulation check, we tested relational distance (manipulation condition)'s effect on interaction frequency across the three countries. Given that interaction frequency was an ordinal variable measured repeatedly, we used Generalized Estimating Equation (GEE) in SPSS (v. 22) to model our data. By means of GEE regression, we first regressed the reported interaction frequency on the condition of relational distance for American, Chinese, and Japanese participants separately. In all three countries, we found significant main effects of social distance (US: χ^2 [2] = 127.32, $p < .001$; China: χ^2 [2] = 52.33, $p < .001$; Japan: χ^2 [2] = 199.71, $p < .001$) in the expected way that participants interacted with close others most frequently and with distant others least frequently (*ps* < .001). These results confirmed the effectiveness of our manipulation.

In addition, across all participants we found a significant interaction between the condition of relational distance and the origin of country on reported interaction frequency, χ^2 (4) = 29.54, $p < .001$. Planned comparisons indicated that the differences between close others and distant others, and between acquaintances and distant others were smaller in the U.S.A. than in Japan (b = -1.08, *odds ratio* = .34, $p = .001$, and b = -.69, *odds ratio* = .50, $p = .005$, respectively), as well as smaller in China than in Japan (b = -1.62, *odds ratio* = .20, $p < .001$, and b = -.83, *odds ratio* = .44, $p = .002$, respectively).

Descriptive Statistics

Table S7 displays descriptive statistics for the aforementioned criterion measures in each of the three countries.

Correlations between Trust Measures and Criterion Scales

Tables S8-S10 display zero-order correlations (Pearson's *r*) between attitudinal trust, behavioral trust (the trust game), emotional closeness, and the willingness to help/share at each level of relational distance and in each of the three countries. As illustrated in these tables, attitudinal trust had substantial, positive correlations with emotional closeness and the willingness to help/share across different target persons and in each country. Attitudinal trust was also positively associated with behavioral trust. These results supported the predictive relationships between our trust measures and criterion scales.

Appendix

Final Items of Interpersonal Trust Scale (6 Items).

This person would not cheat me, even if there was no chance that he/she would get caught.

I rarely worry that this person might take advantage of me.

I have no doubt that this person is always on my side.

I am confident that this person would never harm me.

I am confident in this person's ability to keep his/her word.

I am able to count on this person in times of need.

Final Items of Emotional Closeness Subscale (4 Items).

I experience intimate interactions with this person.

This person and I often share secrets and private feelings.

I feel emotionally close to this person.

This person and I often tell each other everything we are going through.

Final Items of the Willingness to Help Subscale (4 Items).

I would not be too picky about equality with this person, such as when sharing resources or providing help.

I am willing to help and protect him/her unconditionally, even at cost of my own interests.

I feel the responsibility to promote the well-being of this person.

I am willing to offer him/her any material and social support with no expectation of return, if it would not hurt my own interests.

Study 3

Country-Level Measures

Societal In-Group Favoritism. In-group favoritism is considered a core facet of collectivism in relation to cooperation and trust (Triandis, 1995; Yamagishi et al., 1998). Van de Vliert developed and validated a national index of societal in-group favoritism for 178 countries around the globe (Van de Vliert, 2011). A nation's societal prevalence of in-group favoritism was indexed by its enacted norms and practices of compatriotism (e.g., give priority to compatriots over immigrants for scarce jobs), nepotism (e.g., senior management positions are held by relatives), and familism (e.g., children live at home with their parents until they get married), as judged by both ordinary citizens and experts. Importantly, these data came from diverse sources surveyed earlier than the collection time of our extracted WVS dataset, mitigating common method bias.

Status of Sociopolitical Institutions. We sourced statistics reflecting a nation's economic, political, and religious configuration. The quality of each nation's economic institution was assessed by its income inequality—GINI coefficient (The Central Intelligence Agency, 2017). The quality of a nation's political institution was assessed by three indicators of the Worldwide Governance Indicators (The World Bank, 2016)[1], including regulatory quality, rule of law, and

[1] For country indices compiled annually, we sourced data from the year of 2004; if 2004 data were not available, we sourced data from other years close to 2004. This was to improve the inference of a country-

control of corruption; previous research has indicated that these political indexes were connected with the citizenry's trusting tendencies or trustworthiness (Gächter & Schulz, 2016; Muethel & Bond, 2013); Cronbach's alpha for these three indicators was .97 across 204 countries, so we created an index of "governance quality" by averaging the three indicators for each included country. Last, given that Protestantism is considered an important religious tradition that depresses in-group favoritism or parochialism (Hruschka & Henrich, 2013), we also assessed the prevalence of Protestantism in each country by calculating the percentages of WVS respondents who self-identified as Protestants. In our analyses, we used the square-root-transformed scores of Protestantism to adjust for its skewed distribution.

Natural and Social Stressors. We sourced two national indicators tapping into a nation's natural and human-generated survival challenges, including stress of infectious diseases and inter-group conflict. These natural and social stressors have been linked with in-group-bounded cooperation and trust (Fincher & Thornhill, 2012; White et al., 2012). A nation's stress of infectious diseases was indexed by the severity and prevalence of human infectious diseases, viz., combined parasite-stress indices (Fincher & Thornhill, 2012). We also sourced the Global Peace Index (The Institute for Economics and Peace, 2017), assessing the existence or absence of peace in a nation. This index was compiled based on various indicators, such as number of domestic and international conflicts fought and military expenditure, which we re-labeled as "conflict status" or "absence of peace". Higher scores on stress of infectious diseases and conflict status indicated greater existential threats faced by a nation.

Additional National Indexes. First, to check the robustness of our findings concerning societal collectivism, we also sourced another well-established national-cultural indicator, viz., Hofstede's individualism index (Hofstede et al., 2010), from the authors' website (https://geerthofstede.com/research-and-vsm/dimension-data-matrix/). Second, a recent study has linked in-group-bounded pro-sociality (e.g., lower out-group trust) with a nation's shorter historical exposure to the Western Catholic Church (which weakened familism) or more intensive kin-based institutions during the premodern era (Schulz et al., 2019). As a result, we added these two historical indexes to our main indexes of a nation's contemporary conditions. Last, we also sourced an indicator from Schulz et al.'s (2019) dataset to assess a nation's overall religiosity (i.e., the emphasis of religion) in addition to its endorsement of a particular religion (e.g., Protestantism).

Country Information and Descriptive Statistics for National Indexes

level variable's temporal influence on the WVS (2005-2014) trust responses. In fact, most countries' annual country indices were pretty stable over the past 10-15 years.

Table S11 displays scores for the main national indexes in each of the included countries.

Test of Cross-Level Interaction between Relational Distance and Human Ecology

We ran a series of two-level hierarchical linear modelings (as described in the main text) to test the cross-level interaction between relational distance and each of the included ecocultural indicators, while controlling for other ecocultural indicators' main effects on the national average levels of interpersonal trust.[2] Likewise, we also performed a series of tests in which the moderating effect of societal in-group favoritism was pitted against the moderating effect of each of the other ecocultural indicators. Below, we report results for each of these tests separately.

Governance Quality. We found a significant main effect of relational distance ($p < .001$), but this effect was qualified by a significant cross-level interaction between relational distance and a nation's governance quality ($b = .09$, $df = 438{,}514$, 95% CI = [.06, .12], $p < .001$). Figure S1 plots this interaction.

Stress of Infectious Diseases. We found significant main effects of relational distance ($p < .001$) and stress of infectious diseases ($p = .031$), but these effects were qualified by a significant cross-level interaction between relational distance and a nation's governance quality ($b = -.01$, $df = 438{,}514$, 95% CI = [-.03, -.00], $p = .025$). Figure S2 plots this interaction.

Conflict Status. We found a significant main effect of relational distance ($p < .001$), but this effect was qualified by a significant cross-level interaction between relational distance and a nation's conflict status ($b = -.18$, $df = 438{,}514$, 95% CI = [-.26, -.10], $p < .001$). Figure S3 plots this interaction.

GINI. We found a significant main effect of relational distance ($p < .001$), but this effect was qualified by a significant cross-level interaction between relational distance and a nation's GINI score ($b = -.004$, $df = 438{,}514$, 95% CI = [-.008, -.000], $p = .039$). Figure S4 plots this interaction.

Protestantism. We found a significant main effect of relational distance ($p < .001$), but this effect was qualified by a significant cross-level interaction between relational distance and a nation's prevalence of Protestantism ($b = .20$, $df = 438{,}514$, 95% CI = [.04, .35], $p = .012$). Figure S5 plots this interaction.

Hofstede's Individualism Index. We found a significant main effect of relational distance ($p < .001$), but this effect was qualified by a significant cross-level interaction between relational distance and a nation's individualism ($b = .004$, df = 370,871, 95% CI = [.003, .005], $p < .001$).

[2] For the main analyses, we regressed the outcome variable on societal in-group favoritism (or Hofstede's individualism), governance quality, pathogen prevalence, absence of peace, GINI, and Protestantism simultaneously. For additional analyses, we regressed the outcome on these main country-level predictors as well as religiosity, the exposure to the Western Church, and kinship intensity simultaneously.

As illustrated in Figure S6, this interaction was consistent with how relational distance interacted with societal in-group favoritism.

Religiosity. We found a significant main effect of relational distance ($p < .001$), but this effect was qualified by a significant cross-level interaction between relational distance and a nation's religiosity ($b = -.08$, df = 411,813, 95% CI = [-1.23, -.03], $p = .011$). Figure S7 plots this interaction.

The Exposure to the Western Catholic Church. We found a significant main effect of relational distance ($p < .001$), but this effect was qualified by a significant cross-level interaction between relational distance and a nation's exposure to the Western Church ($b = .02$, $df = 411,813$, 95% CI = [.02, .03], $p < .001$). Figure S8 plots this interaction.

Kinship Intensity. We found a significant main effect of relational distance ($p < .001$), but this effect was qualified by a significant cross-level interaction between relational distance and a nation's historical kinship intensity ($b = -.03$, $df = 411,813$, 95% CI = [-.07, -.00], $p = .033$). Figure S9 plots this interaction.

The Unique Moderating Effect of Societal In-Group Favoritism. We found that societal in-group favoritism remained a significant moderator ($ps < .01$), after controlling for the moderating effect of each of the abovementioned moderators (one at a time). On the contrary, after controlling for the moderating effect of societal in-group favoritism, governance quality, the stress of infectious diseases, conflict status, GINI, and Protestantism, as well as religiosity and kinship intensity, each lost its power to moderate how relational distance (close vs. distant) affected interpersonal trust levels ($ps > .10$).[3] As illustrated in Table S12, comparisons of model fit statistics (e.g., AIC, BIC) further indicated that societal in-group favoritism contributed to the micro-macro interplay of current interest over and beyond each of these competing country-level moderators.

Summary. Taken together, these converging pieces of evidence indicated that relational distance interacted with various sociopolitical and natural environments, in addition to national collectivism (or individualism), to influence people's interpersonal trust levels. Similar to the findings for national collectivism, interpersonal trust was more bounded by relational distance in countries embedded within more constraining sociopolitical and natural ecologies (e.g., less effective governance, higher pathogen prevalence, a greater emphasis on religion) as well as historical conditions (i.e., historical religious and socioecological institutions associated with

[3] The exposure to the Western Church still remained a significant moderator, but comparisons of model fit indicated that societal in-group favoritism outperformed this indicator in predicting the micro-macro interaction (see Table S12).

more intensive kinship). Additionally, the levels of trusting non-close persons (intermediate others or distant others) were generally higher in countries within less constraining ecologies, whereas such national differences disappeared in the context of trusting close others. Importantly, national collectivism had unique explanatory power for the micro-macro interplay compared to other ecocultural variables.

Comparisons between Two-Level and Three-Level Modeling

In this study, each respondent reported their interpersonal trust at different relational distances (close, intermediate, and distant). So, unlike our ignoring of this within-respondent data dependency in our two-level multilevel modeling, we could build a three-level model in which trust responses were nested within respondents and respondents were nested within countries. More specifically, in this three-level model each respondent's intercept of trust responses (i.e., the level of trusting close persons) was set to vary between respondents, and each country's intercept (i.e., the average level of trusting close persons) and slope (i.e., the main effect of relational distance on trust) was set to vary between countries. Then, we used national indexes of interest to predict the variation in these country-level intercepts and slopes (i.e., testing the cross-level interaction between relational distance and a given ecocultural predictor).

We compared the results of our two-level modeling and this three-level modeling for the moderating effect of national collectivism. As illustrated in Table S13, the two models produced almost identical results for the cross-level interaction, though the three-level model fit the data better (smaller AIC and BIC) than the two-level model did. We decided to use two-level modeling in this study, given that the three-level modeling was much more computational costly (e.g., taking much longer time to compute).

Test of Spatial Autocorrelation

Following the recommended procedures (Dray, 2020; Jombart, 2015), we assessed the strength of positive spatial autocorrelation, viz., data are more similar between neighboring countries compared to their counterparts, based on spatial weighting matrix that represents the spatial connections between the 77 countries (e.g., which countries are neighbors, how proximate and distant these countries are, etc.). With the help of R software's adespatial package (Dray et al., 2020) and based on each country's geographic coordinates (i.e., latitude and longitude), we visually identified that a minimum spanning tree—a method to model the geometric connectivity—compared to other candidate methods (Bauman et al., 2018) more accurately described how the 77 countries are spatially connected (e.g., which countries are neighbors on the map). As a result, we employed this method to generate a spatial weighting matrix and then calculated a global R^2 statistic across all three types of interpersonal trust to assess positive spatial

autocorrelation (Dray et al., 2020; Jombart et al., 2008). The significance of this statistic was tested using the robust, Monte-Carlo permutation test (number of permutations = 999) as provided by the adespatial package.

To account for spatial autocorrelation present in this dataset, we also generated predictors of spatial pattern underlying our cross-country trust data. More specifically, using the selection method ("FWD") as implemented in the adespatial package (Bauman et al., 2018a; Bauman et al., 2018b) we extracted three orthogonal predictors that parsimoniously explained spatial autocorrelation of current interest. These spatial predictors then served as covariates in our multilevel modeling analyses and thereby "absorbed" spatial autocorrelation in regression residuals (Dray et al., 2012).

Study 4

Provincial-Level Measures

Provincial Collectivistic Orientations. Even though China is widely regarded as a prototypically collectivistic country, nuanced regional differences in collectivistic orientation have been found across different Chinese provinces (Van de Vliert et al., 2013; Talhelm et al., 2014). Van de Vliert and his colleagues have developed a provincial-level index of collectivistic orientation for 31 Chinese provinces, which reflected each province's enacted values and norms related to in-group identity, attachment, and obedience (Van de Vliert et al., 2013). More specifically, they first gathered and aggregated individual endorsements of in-group bounded collectivistic values (sample items: "*I view myself as a member of a social group*" [in-group identity and attachment] and "*As an employee, I have to respect decisions made by my organization*" [in-group obedience]) for 15 Chinese provinces, and then interpolated scores for all 31 provinces based on the assumed relationship between climate, affluence, and collectivism; the observed and predicted values were highly similar by means of this interpolation.

Our pilot analysis also found supporting evidence for this provincial cultural index. For instance, single-person households and residential mobility, both of which are sociological indicators of individualistic lifestyle (Grossmann & Varnum, 2015; Oishi & Graham, 2010), were substantially lower in more collectivistic-oriented Chinese provinces as identified by Van de Vliert et al (47).

In our analyses, we log-transformed this index to adjust for its skewed distribution in this sample.

Status of Sociopolitical Institutions. Each province's affluence was assessed by its annual per capita disposable income (PCDI) averaged across 2012-2015 (National Bureau of Statistics of

the People's Republic of China, 2010-2016). In our analyses, we log-transformed PCDI scores to adjust for their skewed distribution. Income inequality was assessed by a province's annual GINI coefficients averaged across 1995-2010 (Duan & Chen, 2010; Tian, 2012). On the other hand, we used expert judgments to assess the quality of local governance in each province (the "government by law" index), as reflected by the provincial city government's perceived accountability, transparency, and effectiveness (The China University of Political Science and Law, 2013); greater scores indicated more effective and impartial governance.

Natural Stressor. As with Study 3, we created a measure of infectious-disease-stress for each Chinese province. Specifically, we sourced annual incidence rates (number of cases per 100,000 people) of notifiable infectious diseases from Chinese Health Statistics Yearbooks (The Ministry of Health of the People's Republic of China, 2003-2013). Over the period of 2002 to 2012, four types of diseases including viral hepatitis, tuberculosis, syphilis, and dysentery had average national incidence rates greater than 10/100,000 per year, a threshold for high incidence (Zhang & Jin, 2011). Among them, our pilot analysis found that only the prevalence of hepatitis C virus (HCV) infection was reliably associated with a province's average levels of trusting other persons.[4] This is consistent with the fact that HCV infection is an exemplary contagious disease that provokes disgust and rejection towards infected persons (Oaten et al., 2009). For the sake of simplicity, we only used the average annual incidence rates of HCV infection across 2002-2012 to compare each province's infectious-disease-stress in relation to interpersonal trust.

Province Information and Descriptive Statistics for Provincial Indexes

Table S14 displays provincial average scores for the aforementioned measures in each of the included provinces.

Test of Cross-Level Interaction between Relational Distance and Human Ecology

Following Study 3's approach, we ran a series of two-level hierarchical linear modelings to test whether and how relational distance interacts with human ecology to influence interpersonal trust levels across Chinese provinces. In addition, we performed a series of tests in which the moderating effect of provincial collectivistic orientation was pitted against the moderating effect of other ecocultural indicators. Below, we report results for each of these tests separately.

HCV Prevalence. We found a significant main effect of relational distance ($p < .001$), but this effect was qualified by a significant cross-level interaction between relational distance and a province's HCV prevalence (b = -.01, *df* = 32,286, 95% CI = [-.01, -.00], $p = .012$). Figure S10 plots this interaction.

[4] The total incidence rates of all notifiable diseases also were not related to any provincial levels of interpersonal trust.

PCDI. We found a significant main effect of relational distance (b = -1.81, df = 32,286, 95% CI = [-3.13, -.48], p = .007), suggesting that across all provinces the average levels of trusting close others were higher than the average levels of trusting intermediate others and distant others. By contrast, the main effect of PCDI and the cross-level interaction were not significant (ps > .250).

Governance Quality. We found a significant main effect of relational distance (p < .001), but this effect was qualified by a significant cross-level interaction between relational distance and a province's governance quality (b = .003, df = 32,286, 95% CI = [.001, .005], p < .001). Figure S11 plots this interaction.

GINI. We found a significant main effect of relational distance (b = -1.17, df = 32,286, 95% CI = [-1.54, -.80], p < .001), suggesting that across all provinces the average levels of trusting close others were higher than the average levels of trusting intermediate others and distant others. By contrast, the main effect of GINI and the cross-level interaction were not significant (ps > .250).

The Unique Moderating Effect of Provincial Collectivistic Orientation. Given that only HCV prevalence and governance quality were significant moderators, we only performed analyses pitting provincial collectivistic orientation against each of these two indicators. We found that both provincial collectivistic orientation and governance quality had unique moderating effects over and beyond each other's influences (ps < .05). On the contrary, both provincial collectivistic orientation and HCV prevalence lost their explanatory power for the micro-macro interplay, after controlling for each other's influences (ps > .10). As illustrated in Table S15, comparisons of model fit statistics also suggested that provincial collectivistic orientation contributed to the micro-macro interplay of current interest over and beyond governance quality but not over and beyond HCV prevalence.

Summary. Taken together, we found that relational distance interacted with political and natural environments, in addition to provincial collectivism, to influence interpersonal trust levels across Chinese provinces. Similar to the findings for provincial collectivism, interpersonal trust was more bounded by relational distance in provinces embedded within more constraining political and natural ecologies (i.e., less effective governance and higher HCV prevalence). Additionally, the average levels of trusting distant others tended to be higher in provinces within less constraining ecologies, but the magnitude of such provincial differences became appreciably reduced in the context of trusting intermediate others and close others. Last, provincial collectivism had unique explanatory power over and above governance quality, but not over and above HCV prevalence, for the micro-macro interplay of interest.

Comparisons between Two-Level and Three-Level Modeling

As in Study 3, we also compared the results of our two-level modeling and an alternative three-level modeling for the moderating effect of provincial collectivism. As illustrated in Table S16, the two models produced very similar results for the cross-level interaction.

Test of Spatial Autocorrelation

Our procedures for testing and controlling for spatial autocorrelation were identical to Study 3, except for the method based on which spatial weighting matrix was generated. The selection function implemented in adespatial package, this time, helped us visually identify a Gabriel's graph as the most accurate weighting method to represent the geometric connectivity between the 28 Chinese provinces. We generated spatial weighting matrix and calculated the global R^2 statistic accordingly in this study.

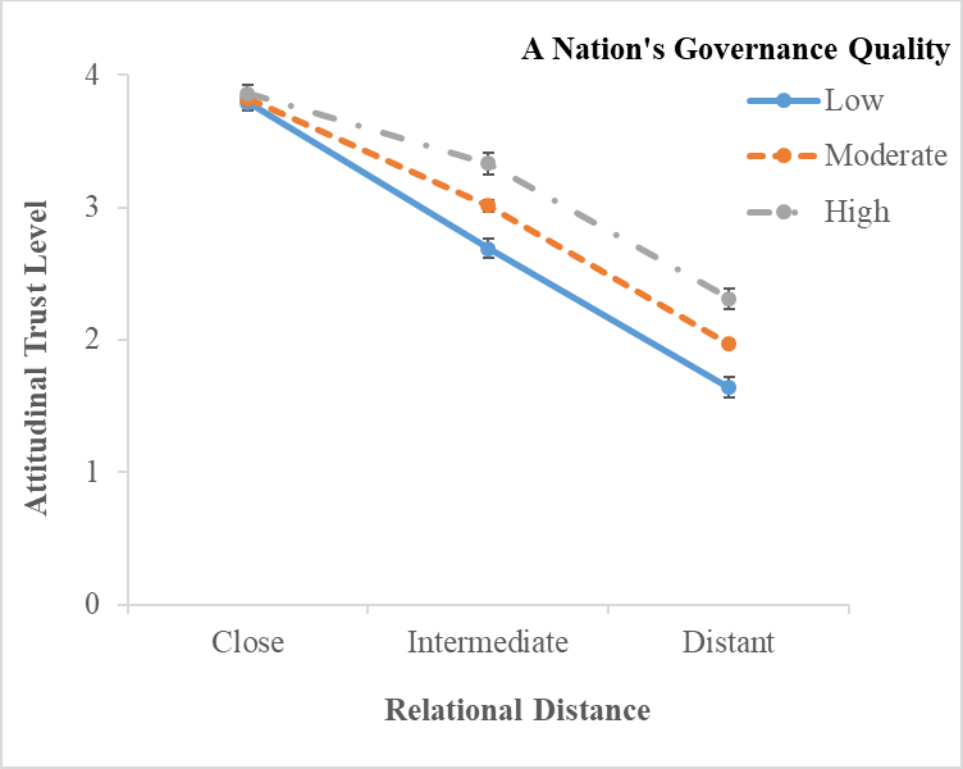
Replication of HCV-Related Results using World-Wide Data

In this study, a novel finding was that relational distance interacted with the prevalence of HCV infection to influence the levels of interpersonal trust across Chinese provinces. To test whether this finding is generalizable, we sourced infection rates of HCV around the world (Gower, Estes, Blach, Razavi-Shearer, & Razavi, 2014), and replicated Chinese HCV results using Study 3's cross-country dataset. Similar to within-China comparisons, a two-level hierarchical linear modeling also found a significant cross-level interaction between relational distance and HCV prevalence (log-transformed) on interpersonal trust levels around the world (b = -.16, df = 344,023, 95% CI = [-.28, -.05], p = .006).

Figure S12 plots this interaction: first, relational distance had a greater impact on interpersonal trust levels in countries where HCV infection was more prevalent. Secondly, the average levels of trusting intermediate others and distant others tended to be higher in countries less plagued by HCV infection, whereas such national differences became negligible in the context of trusting close others. These findings generally replicated within-China results.

Figure S1

The Cross-Level Interaction between Relational Distance and A Nation's Governance Quality



Note. Governance quality is plotted at -1.5 SD (low level), mean (moderate level), and +1.5 SD (high level) of all nations' scores. Error bars display ± 1 SE.

Figure S2

The Cross-Level Interaction between Relational Distance and A Nation's Stress of Infectious Diseases

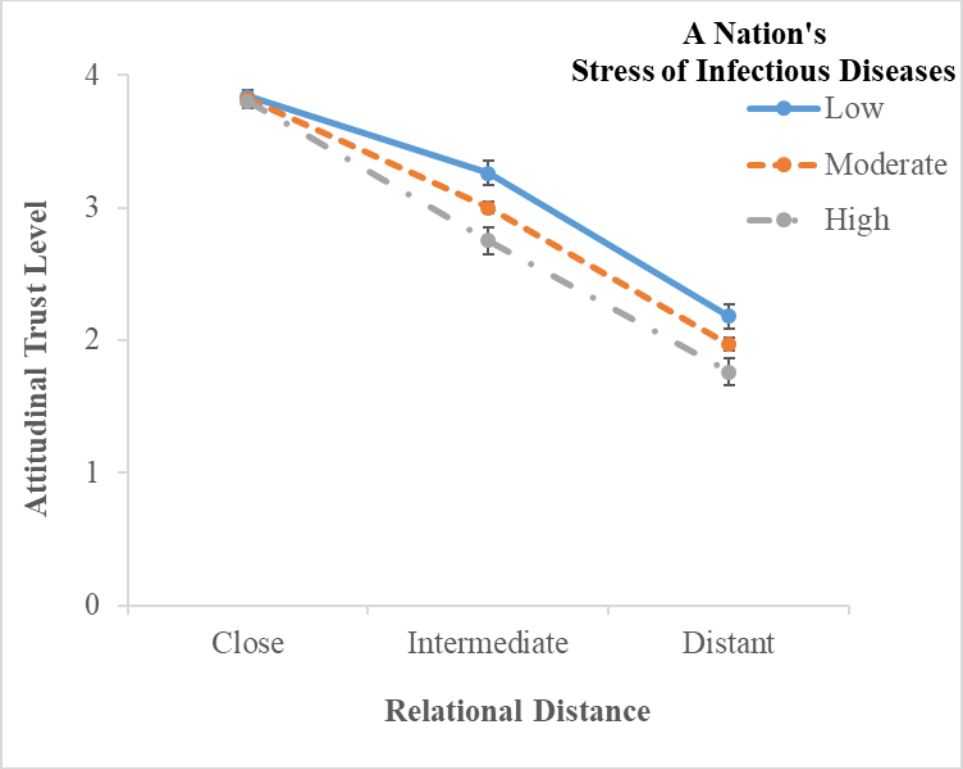


Figure S3

The Cross-Level Interaction between Relational Distance and A Nation's Absence of Peace

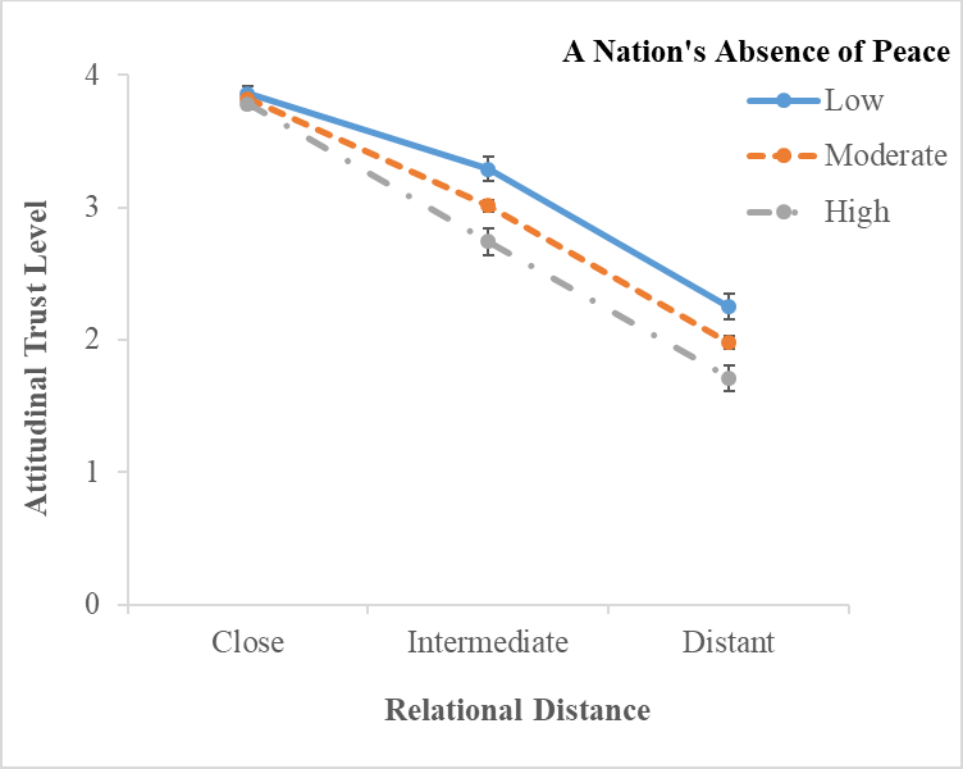


Figure S4

The Cross-Level Interaction between Relational Distance and A Nation's Income Inequality

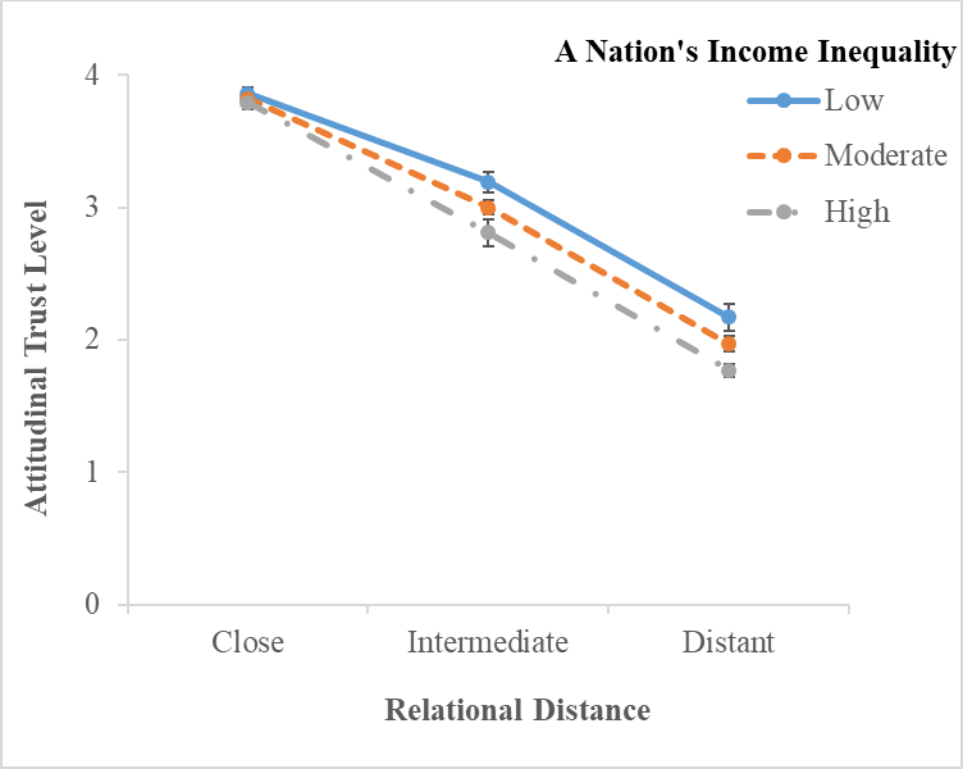


Figure S5

The Cross-Level Interaction between Relational Distance and A Nation's Prevalence of Protestantism

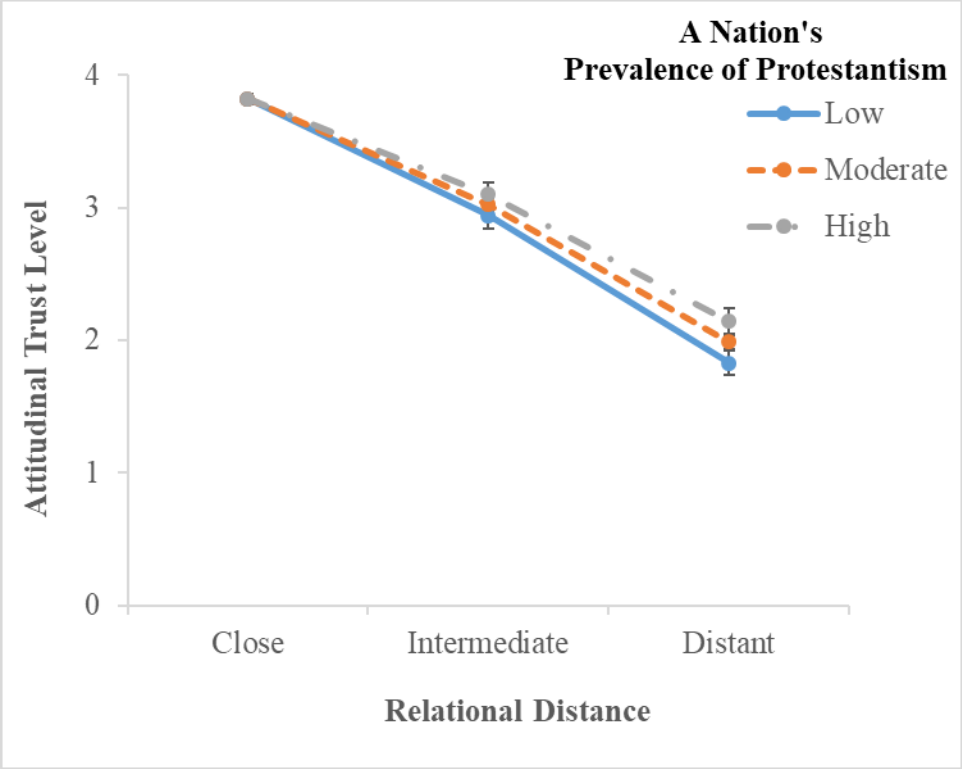


Figure S6

The Cross-Level Interaction between Relational Distance and A Nation's Individualism

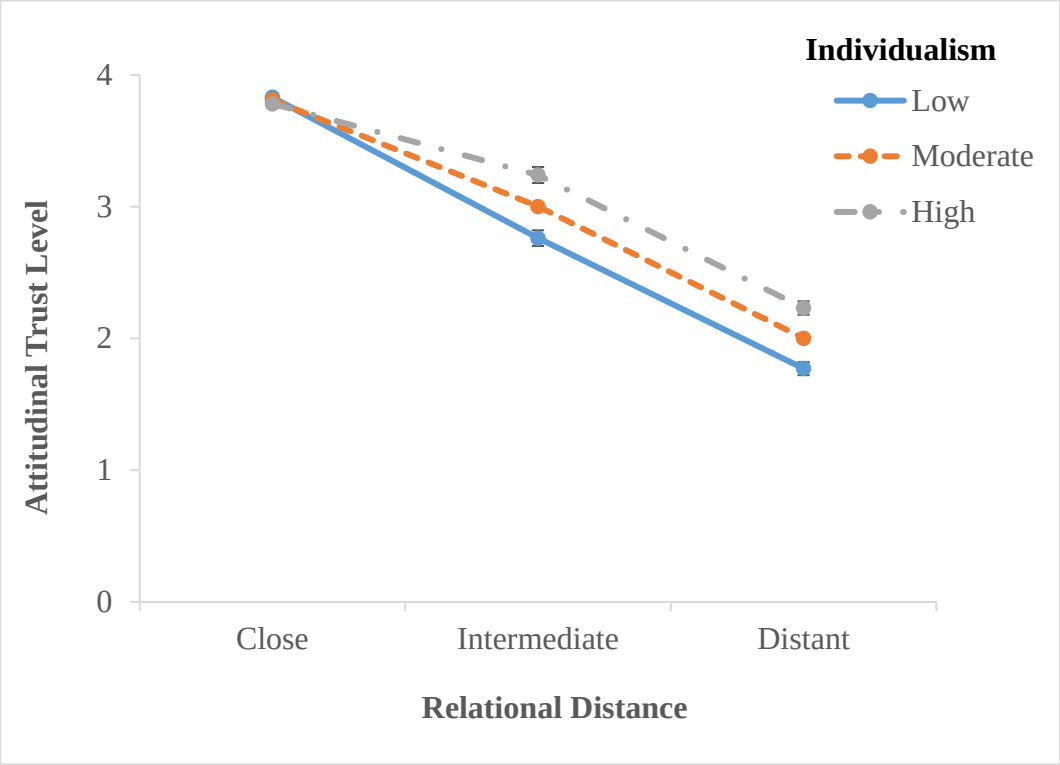


Figure S7

The Cross-Level Interaction between Relational Distance and A Nation's Religiosity

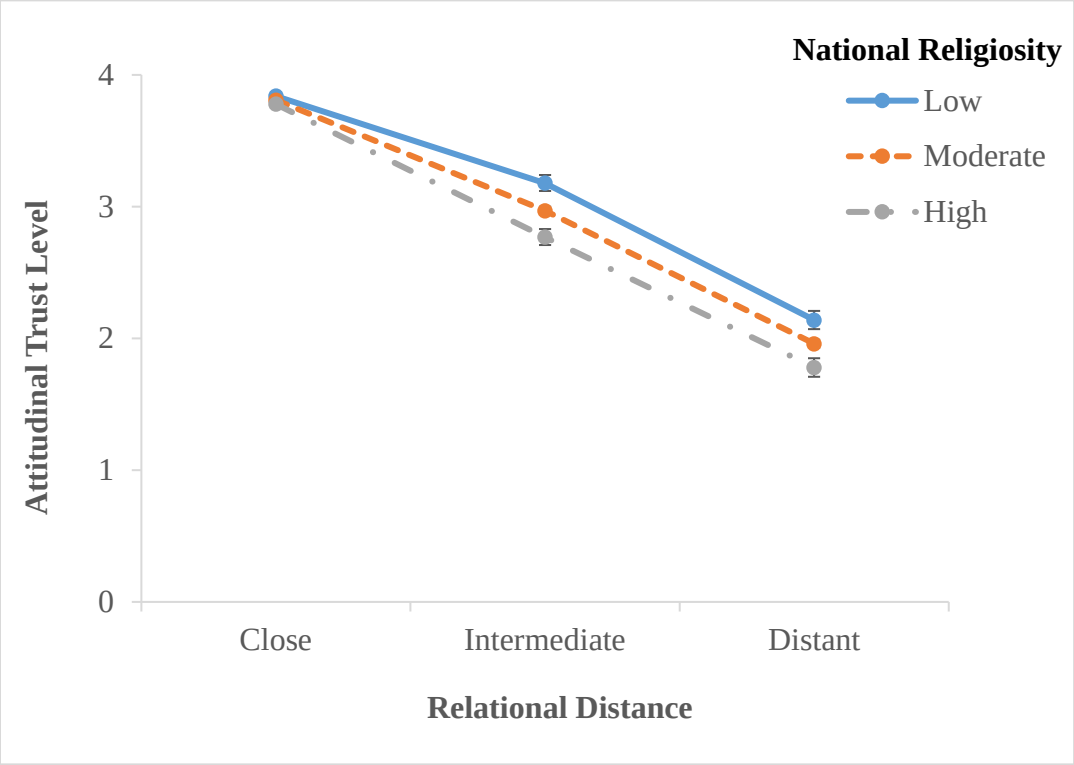


Figure S8

The Cross-Level Interaction between Relational Distance and A Nation's Historical Exposure to the Western Catholic Church

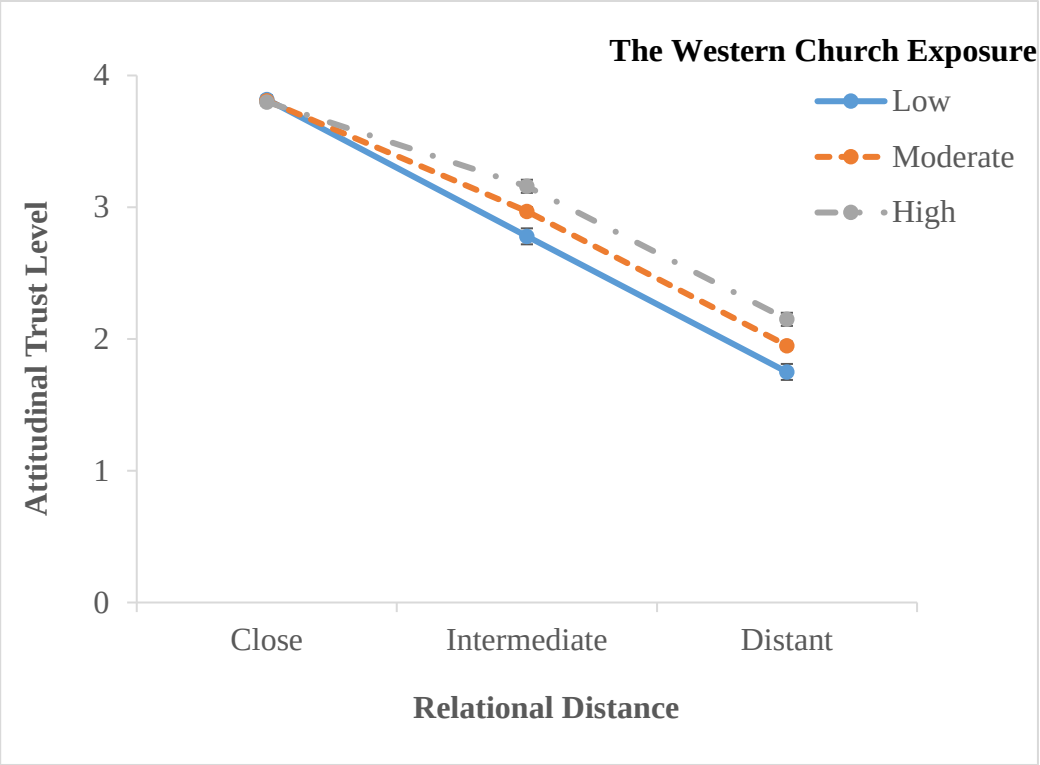


Figure S9

The Cross-Level Interaction between Relational Distance and A Nation's Historical Intensity of Kin-Based Institutions

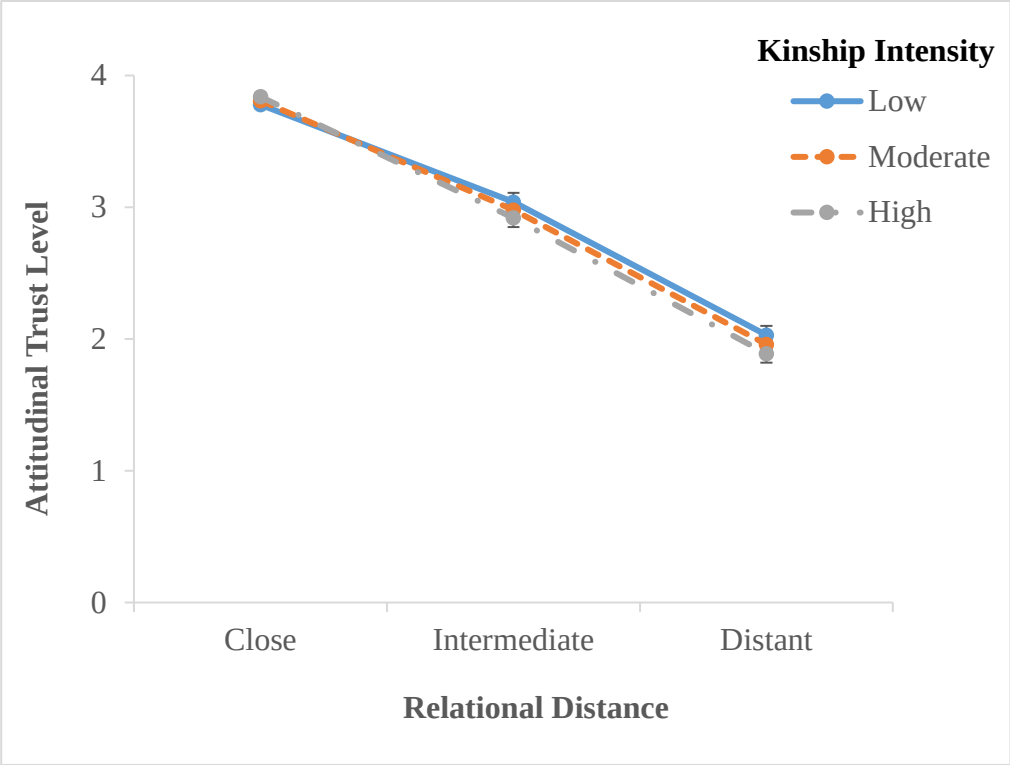
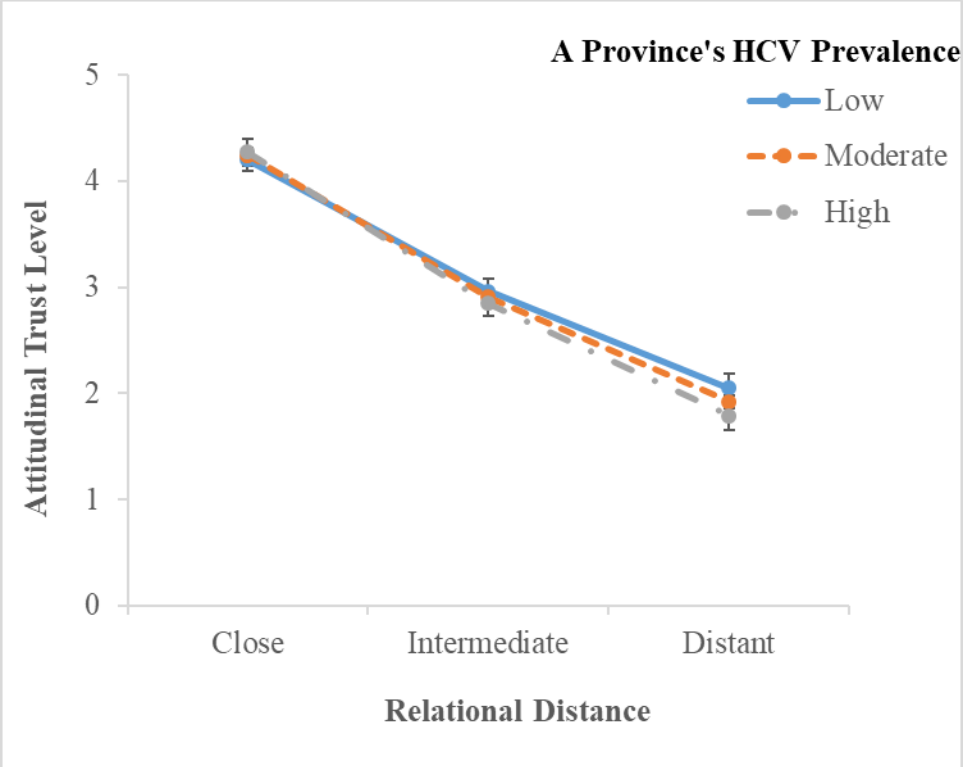


Figure S10

The Cross-Level Interaction between Relational Distance and A Chinese Province's Prevalence of HCV Infection



Note. HCV prevalence is plotted at -1.5 SD (low level), mean (moderate level), and +1.5 SD (high level) of all provinces' scores. Error bars display ± 1 SE.

Figure S11

The Cross-Level Interaction between Relational Distance and A Chinese Province's Governance Quality

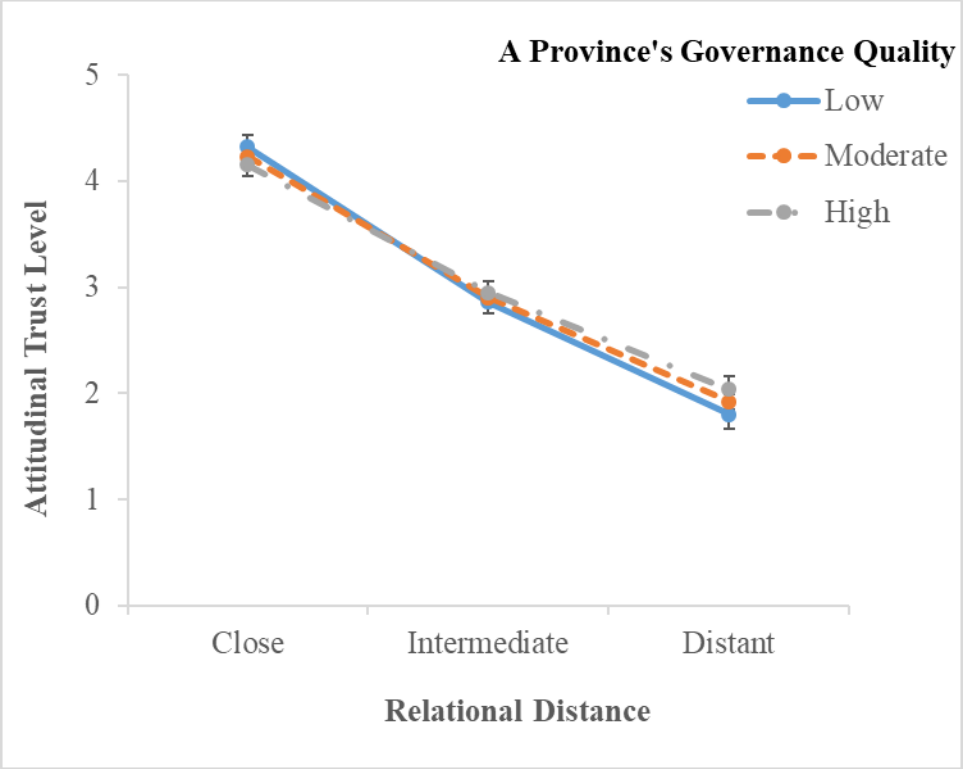


Figure S12

The Cross-Level Interaction between Relational Distance and A Nation's HCV Prevalence

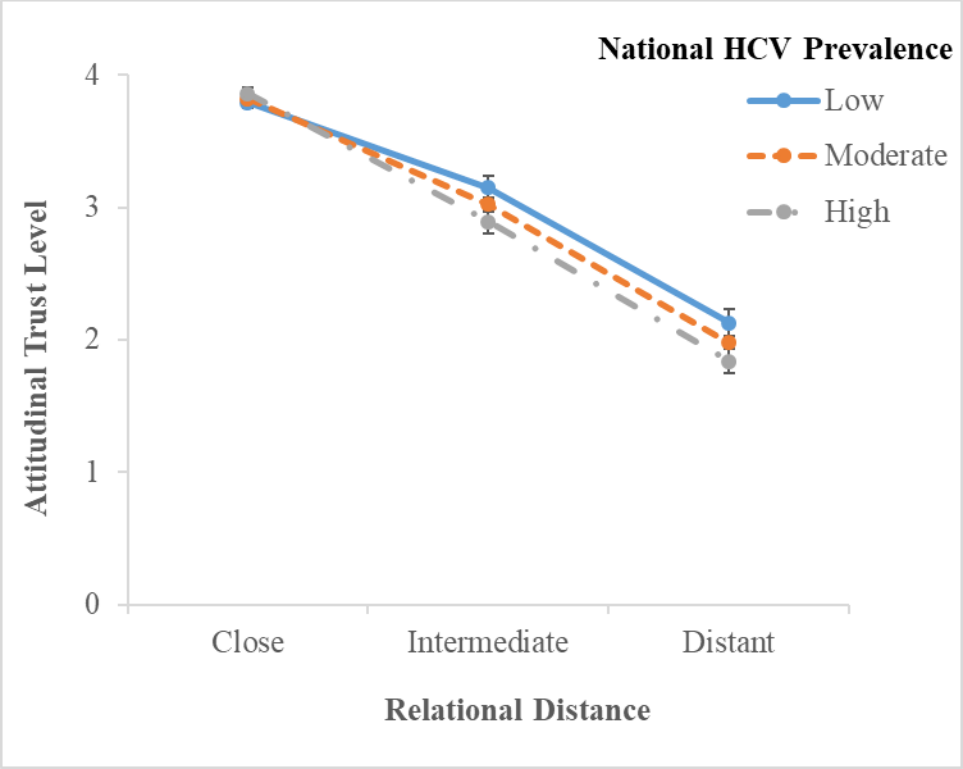


Table S1

Operationalization of Interpersonal Trust in Included Trust Measurements

Measurement type	Trust component	Measurement name	How trust is assessed
Attitudinal questionnaire	Global trusting attitudes	Inglehart's (1997) general trust question	"*Generally speaking, most people can be trusted.*"
		The World Values Survey (WVS)'s general trust question	"*Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?*"
		The WVS's specific trust question	"*Can you trust the following people? Strangers.*"
	Trusting attitudes related to the trustee's good intentions or pro-relationship motivations	Casimir et al.'s (2006) trust in leader scale	Sample item: "*My manager can be relied on to uphold my best interests.*"
		Chu and Choi's (2011) scale measuring trust in social networking sites contacts	Sample item: "*My contacts on my 'friends' list on the SNS offer honest opinions.*" (SNS = Social Networking Sites)
		Gefen and Straub's (2004) trusting disposition scale	Sample item: "*I feel that people are generally well meaning.*"
		Huff and Kelley's (2005) scale	Sample item: "*I believe that people usually keep their promises.*"

Larzelere and Huston's (1980) dyadic trust scale	Sample item: "*My partner is perfectly honest and truthful with me.*"
Rotter's (1967) interpersonal trust scale	Sample item: "*Most people can be counted on to do what they say they will do.*"
Wang and Clegg's (2002) trust in employees' psychological maturity	The item tested "*the extent to which a manager believed that subordinates are willing to take responsibility for their work, and obtains information on trust in employees' psychological maturity*."
Wheeless and Grotz's (1977) individualized trust scale	Semantic differential type items regarding a specific person, such as "*benevolent-exploitive*".
Wrightsman's (1974) trustworthiness scale	Sample item: "*people usually tell the truth, even when they know they would be better off lying.*"
Yamagishi and Yamagishi's (1994) general trust scale	Sample item: "*Most people are basically good and kind*."
Yamagishi's (1988) scale	Sample item: "*Most people tell a lie when they can benefit by doing so."* (dishonesty)
Yum and Hara's (2006) relational partner trust scale	Sample item: "*I know what her/his likes are.*"

	Rempel et al.'s (1985) trust scale	Sample item: "*I can count on my partner to be concerned about my welfare.*"
Trusting attitudes related to the trustee's competence and expertise	McAllister's (1995) cognitive-based trust scale	Sample item: "*Given this person's track record, I see no reason to doubt his/her competence and preparation for the job.*"
	Wang and Clegg's (2002) trust in employees' job maturity	The item tested "*whether a good manager should provide his employees with detailed and complete indications on the way they should do their jobs.*"
Trusting attitudes related to everyday interdependent behavior.	Atuahene-Gima and Li's (2002) supervisee trust scale	Sample item: "*My supervisor and I have a sharing relationship; we freely share our ideas, feelings, and hopes about the work we do.*"
	McAllister's (1995) affective-based trust scale	Sample item: "*I can talk freely to this individual about difficulties I am having at work and know that (s)he will want to listen.*"
	Schoorman et al.'s (1996) trust in supervisor scale	Sample item: "*I would be willing to let my supervisor have complete control over my future in the organization.*"
	Zhang and Bond's (1993) interpersonal trust behavioral scale	Sample item: "*You can let him/her read your personal diary.*"

Behavioral game	Trust choices with economic consequences	Berg et al.'s (1995) trust game	Trust is measured by the trustee's decision to entrust the trustor with a variable amount of money, in the face of the risk of being exploited.
		Cook et al.'s (2005) modified prisoner's dilemma game	Similar to Berg et al.'s trust game.
		Ozer et al.'s (2012) forecasting sharing game	Trust is measured by the similarity between the trustor's production decision in response to the trustee's potentially inflated demand forecast, and the trustor's decision in response to the computer's unbiased demand request.
	Trust-related choices (cooperation in the face of risks) with economic consequences	Prisoner's Dilemma Game	Trust is reflected by the participant's decision to cooperate with the partner, in the face of the risk of being exploited.
		Public goods game	Trust is reflected by the participant's decision to contribute to a group resource, in the face of the risk of being exploited by other "free-riders".
		Resource goods game	Trust is reflected by the participant's decision to refrain from taking from a

group resource, in the face of the risk of being exploited by other selfish partners (who will take from the same group resource).

Table S2

Coding Description of Attitudinal Studies Assessing Trust in Unfamiliar Persons

Study	Measurement	Western sample	East Asian sample	Target of trust	Response scale
Chun et al. (1975)	Rotter's interpersonal trust scale and Wrightsman's trustworthiness scale (Rotter, 1967; Wrightsman, 1974)	American	Korean	People in general	Likert-scale
Hayashi et al. (1982)	The World Values Survey (WVS)'s general trust question	American	Japanese	Most people	Binary
Huff and Kelley (2005)	Huff and Kelley's scale	American	Mainland Chinese, Hong Kongese, Japanese, Korean, and Taiwanese	Most people	Likert-scale
Igarashi et al. (2008)	Yamagishi and Yamagishi's general trust scale (Yamagishi & Yamagishi, 1994)	Australian British	Japanese Korean	Most people	Likert-scale
Ishii (2007)	Yamagishi and Yamagishi's general trust scale (Yamagishi & Yamagishi, 1994)	American	Japanese	Most people	Likert-scale
Kim and Son (1998)	Yamagishi's scale (Yamagishi, 1988)	American (Yamagishi, 1988)	Korean	Most people	Likert-scale
Kuwabara et al. (2014)	Yamagishi and Yamagishi's general	American	Japanese	Most people	Likert-scale

	trust scale (Yamagishi & Yamagishi, 1994)				
Miller and Mitamura (2003)	The WVS's general trust question	American	Japanese	Most people	Likert-scale
Miller and Mitamura (2003)	The WVS's general trust question	American	Japanese	Most people	Binary
Mortenson (2009)	Inglehart's general trust question (Inglehart, 1997)	American	Chinese	Most people	Likert-scale
Schumann et al. (2007)	Gefen and Straub's trusting disposition scale (Gefen & Straub, 2004)	Australian	Chinese	Most people	Likert-scale
World Values Survey (1994-1999)	The WVS's general trust question	American, British, Australian, and New Zealander	Japanese, Mainland Chinese, Taiwanese, and Korean	Most people	Binary
World Values Survey (1999-2004)	The WVS's general trust question	American and Canadian	Chinese, Japanese, Korean, and Singaporean	Most people	Binary
World Values Survey (2005-2009)	The WVS's specific trust question	American, British, Australian, and Canadian	Mainland Chinese, Taiwanese, and Korean	Strangers	Likert-scale
World Values Survey (2005-2009)	The WVS's general trust question	American, Canadian, British,	Mainland Chinese, Taiwanese,	Most people	Binary

		New Zealander, and Australian	Hong Kongese, Korean, and Japanese		
Yamagishi (Yamagishi, 1988)	Yamagishi's scale (Yamagishi, 1988)	American	Japanese	Most people	Likert-scale
Yamagishi and Yamagishi (1994)	Yamagishi and Yamagishi's general trust scale (Yamagishi & Yamagishi, 1994)	American	Japanese	Most people	Likert-scale
Zhang and Bond (1993)	Interpersonal trust behavioral scale (Zhang & Bond, 1993)	American	Mainland Chinese and Hong Kongese	Strangers	Likert-scale

Note. The WVS datasets were extracted from the WVS official longitudinal aggregate file (World Values Survey Association, 2016).

Table S3

Coding Description of Attitudinal Studies Assessing Trust in Familiar Persons

Study	Measurement	Western sample	East Asian sample	Target of trust	Response scale
Atuahene-Gima and Li (2002)	Supervisee trust scale	American	Chinese	Supervisors	Likert-scale
Casimir et al. (2006)	Trust in leader scale	Australian	Chinese	Leaders	Likert-scale
Chu and Choi (2011)	A scale measuring trust in social networking sites contacts	American	Chinese	Friends	Likert-scale
Chua et al. (2009)	Affect-based trust scale and cognitive-based trust scale (McAllister, 1995)	American	Chinese	Business partners	Likert-scale
Feng and Feng (2012)	Wheeless and Grotz's (1977) individualized trust scale	American	Chinese	Family members, friends, and roommates	Likert-scale
Gere and McDonald (2013)	Larzelere and Huston's (1980) dyadic trust scale	American and Canadian	Chinese	Spouses	Likert-scale
MacDonald et al. (2012)	Rempel et al.'s (1985) trust scale	Australian	Japanese	Romantic partners	Likert-scale
Wang and Clegg (2002)	Trust in employees' psychological maturity and job maturity scale	Australian	Chinese	Employees	Likert-scale

Wasti et al. (2007)	Trust in supervisor scale (Schoorman et al., 1996)	American	Singaporean	Supervisors	Likert-scale
World Values Survey (2005-2009)	The WVS's specific trust question	American, Canadian, British, and New Zealander	Mainland Chinese, Taiwanese, and Korean	Family members and acquaintances	Likert-scale
Yum and Hara (2006)	Trust in relational partner scale	American	Japanese and Korean	Online friends	Likert-scale
Zhang and Bond (1993)	Interpersonal trust behavioral scale	American	Mainland Chinese and Hong Kongese	Family members/close others and acquaintances	Likert-scale

Table S4

Coding Description of Included Behavioral Studies Assessing Trust in Unfamiliar Persons

Study	Measurement	Western sample	East Asian sample	Target of trust	Response scale
Buchan et al. (2006)	Trust game	American	Chinese, Japanese, and Korean	Unfamiliar partner	Continuous
Cook et al. (2005)	Modified prisoner's dilemma game (PD/R)	American	Japanese	Unfamiliar partner	Continuous
Hayashi et al. (1999)	Prisoner's Dilemma Game (PDG)	American	Japanese	Unfamiliar partner	Binary
Kiyonari et al. (2006)	Trust game	American	Japanese	Unfamiliar partner	Binary
Ozer et al. (2012)	Forecasting sharing game	American	Chinese	Unfamiliar partner	Continuous
Ozer et al. (2012)	Trust game	American	Chinese	Unfamiliar partner	Continuous
Sell et al. (2002)	Resource goods game	American	Chinese	Unfamiliar partner	Continuous
Sell et al. (2002)	Public goods game	American	Chinese	Unfamiliar partner	Continuous
Wu et al. (2009)	PDG	American (data from Dreber et al., 2008)	Chinese	Unfamiliar partner	Binary
Yamagishi (1988)	Public goods game (under no-sanction condition)	American	Japanese (data from Yamagishi, 1986)	Unfamiliar partner	Continuous
Yamagishi et al. (2005)	PDG	Australian	Japanese	Unfamiliar partner	Continuous

Table S5

Coding Description of Included Behavioral Studies Assessing Trust in Familiar Persons

Study	Measurement	Western sample	East Asian sample	Target of trust	Response scale
Cadsby et al. (2007)	Repeated public goods game	Canadian	Japanese	Acquainted partner	Continuous
Cook et al. (2005)	Cook et al.'s modified prisoner's dilemma game (PD/R)	American	Japanese	Acquainted partner	Continuous
Cook et al. (2005)	Repeated prisoner's dilemma game (PDG)	American	Japanese	Acquainted partner	Continuous
Gächter et al. (2010)	Repeated public goods game (under no punishment condition)	American, British, and Australian	Chinese and Korean	Acquainted partner	Continuous
Ishii and Kurzban (2008)	Public goods game	American (data from Kurzban et al., 2001)	Japanese	Acquainted partner	Continuous

Table S6

Summary of Effect Sizes of Each Included Study

Source	Type of the trustee	Type of measure	Response scale	Effect size *g*	Variance of *g*	Western sample size	East Asian sample size
Atuahene-Gima et al. (2002)	Supervisors	Attitudinal Survey	Likert	0.17	0.01	190	157
Buchan et al. (2006)	Unfamiliar persons	Behavioral game	Continuous	-0.15	0.06	22	24
Cadsby et al. (2007)	Acquainted partners	Behavioral game	Continuous	0.18	0.01	160	160
Casimir et al. (2006)	Supervisors	Attitudinal Survey	Likert	0.63	0.02	119	122
Chu and Choi (2011)	Friends	Attitudinal Survey	Likert	-0.49	0.01	363	300
Chua et al. (2009)	Coworkers	Attitudinal Survey	Likert	0.29	0.01	130	203
Chun et al. (1975)	Unfamiliar persons	Attitudinal Survey	Likert	0.14	0.01	88	182
Cook et al. (2005)	Unfamiliar persons	Behavioral game	Continuous	0.72	0.05	44	44
Cook et al. (2005), the sample playing PD/R	Acquainted partners	Behavioral game	Continuous	0.50	0.03	63	63
Cook et al. (2005), the sample playing PDG	Acquainted partners	Behavioral game	Continuous	-0.24	0.05	36	50

Feng and Feng (2012)	Family members	Attitudinal Survey	Likert	0.15	0.04	94	34
Feng and Feng (2012)	Friends	Attitudinal Survey	Likert	-0.07	0.01	124	204
Feng and Feng (2012)	Roommates	Attitudinal Survey	Likert	0.41	0.09	20	26
Gächter et al. (2010)	Acquainted partners	Behavioral game	Continuous	-0.22	0.02	51	90
Gere and McDonald (2013)	Spouses	Attitudinal Survey	Likert	-0.37	0.01	104	100
Hayashi et al. (1982)	Unfamiliar persons	Attitudinal Survey	Binary	0.51	0.00	1571	2032
Hayashi et al. (1999)	Unfamiliar persons	Behavioral game	Binary	0.82	0.15	29	25
Huff and Kelley (2005)	Unfamiliar persons	Attitudinal Survey	Likert	1.40	0.01	160	160
Igarashi et al. (2008)	Unfamiliar persons	Attitudinal Survey	Likert	-0.08	0.01	103	104
Ishii (2007)	Unfamiliar persons	Attitudinal Survey	Likert	0.42	0.04	42	70
Ishii and Kurzban (2008)	Acquainted Partners	Behavioral game	Continuous	-0.35	0.03	100	50
Kiyonari et al. (2006)	Unfamiliar persons	Behavioral game	Binary	0.35	0.02	128	134
Kuwabara et al. (2014)	Unfamiliar persons	Attitudinal Survey	Likert	0.52	0.02	93	112
MacDonald et al. (2012)	Romantic partners	Attitudinal Survey	Likert	0.65	0.02	83	159

Miller and Mitamusa (2003)	Unfamiliar persons	Attitudinal Survey	Likert	0.39	0.01	169	293
Mortenson (2009)	Unfamiliar persons	Attitudinal Survey	Likert	-0.40	0.01	237	268
Ozer et al. (2012), sample one	Unfamiliar persons	Behavioral game	Continuous	0.55	0.03	74	78
Ozer et al. (2012), sample two	Unfamiliar persons	Behavioral game	Continuous	1.10	0.12	18	20
Ozer et al. (2012), sample three	Unfamiliar persons	Behavioral game	Continuous	1.47	0.13	18	20
Ozer et al. (2012), sample four	Unfamiliar persons	Behavioral game	Continuous	1.46	0.14	18	18
Ozer et al. (2012), sample five	Unfamiliar persons	Behavioral game	Continuous	1.52	0.13	20	20
Schumann et al. (2007)	Unfamiliar persons	Attitudinal Survey	Likert	-0.23	0.01	136	126
Sell et al. (2002), sample one	Unfamiliar persons	Behavioral game	Continuous	1.05	0.11	20	20
Sell et al. (2002), sample two	Unfamiliar persons	Behavioral game	Continuous	1.07	0.11	20	20
Wang and Clegg (2002)	Employees	Attitudinal Survey	Likert	0.29	0.01	112	216
Wasti et al. (2007)	Supervisors	Attitudinal Survey	Likert	0.54	0.01	334	207

WVS (2005-2009)	Unfamiliar persons	Attitudinal Survey	Likert	0.59	0.00	1424	1429
WVS (1994-1999)	Unfamiliar persons	Attitudinal Survey	Binary	-0.04	0.00	1450	1145
WVS (1999-2004)	Unfamiliar persons	Attitudinal Survey	Binary	0.08	0.00	1549	1228
WVS (2005-2009)	Unfamiliar persons	Attitudinal Survey	Binary	0.12	0.00	1336	1308
WVS (2005-2009)	Family members	Attitudinal Survey	Likert	-.14	0.00	1311	1467
Wu et al. (2009)	Unfamiliar persons	Behavioral game	Binary	0.18	0.01	104	94
Yamagishi (1986, 1988)	Unfamiliar persons	Behavioral game	Continuous	0.26	0.01	192	192
Yamagishi (1988), and Kim & Son (1998)	Unfamiliar persons	Attitudinal Survey	Likert	0.57	0.00	532	734
Yamagishi & Yamagishi (1994), adult sample	Unfamiliar persons	Attitudinal Survey	Likert	0.76	0.01	244	206
Yamagishi and Yamagishi (1994), college sample	Unfamiliar persons	Attitudinal Survey	Likert	0.46	0.01	199	913
Yamagishi et al. (2005)	Unfamiliar persons	Behavioral game	Continuous	0.74	0.04	49	56

Yum and Hara (2006)	Online friends	Attitudinal Survey	Likert	1.03	0.01	112	124
Zhang and Bond (1993)	Unfamiliar persons	Attitudinal Survey	Likert	-0.33	0.02	49	78
Zhang and Bond (1993)	Close others	Attitudinal Survey	Likert	-0.20	0.02	49	78

Table S7

Means and Standard Deviations for Emotional Closeness, and the Willingness to Offer Help at Different Relational Distances in Each of the Three Countries

		Emotional closeness	Willing to help/share
U.S.A.			
	Close	7.57 (1.46)	8.18 (1.11)
	Intermediate	3.47 (2.17)	5.52 (1.93)
	Distant	3.84 (2.38)	5.61 (2.19)
China			
	Close	7.68 (1.64)	7.78 (1.50)
	Intermediate	4.49 (2.08)	5.24 (1.77)
	Distant	3.61 (2.51)	4.78 (2.08)
Japan			
	Close	7.39 (1.77)	6.74 (1.58)
	Intermediate	3.78 (1.95)	4.24 (1.69)
	Distant	2.16 (1.61)	3.17 (1.72)

Note. Standard deviations are reported in parentheses.

Table S8

Zero-Order Correlations within Close Relationships in Each of the Three Countries

		Behavioral trust	Emotional close	Willing to help
U.S.A.				
	Attitudinal trust	.16	.41***	.65***
	Behavioral trust		.00	.22**
	Emotional close			.62***
China				
	Attitudinal trust	.53***	.74***	.73***
	Behavioral trust		.49***	.50***
	Emotional close			.77***
Japan				
	Attitudinal trust	.11	.60***	.66***
	Behavioral trust		.01	.07
	Emotional close			.68***

Note. Statistical inference is based on Pearson's r. ** $p < .01$. *** $p < .001$.

Table S9

Zero-Order Correlations within Intermediate Relationships in Each of the Three Countries

		Behavioral trust	Emotional close	Willing to help
U.S.A.				
	Attitudinal trust	.33***	.62***	.80***
	Behavioral trust		.14	.36***
	Emotional close			.72***
China				
	Attitudinal trust	.50***	.66***	.76***
	Behavioral trust		.48***	.48***
	Emotional close			.68***
Japan				
	Attitudinal trust	.32***	.54***	.60***
	Behavioral trust		.27**	.27**
	Emotional close			.68***

Note. Statistical inference is based on Pearson's r. ** $p < .01$. *** $p < .001$.

Table S10

Zero-Order Correlations within Distant Relationships in Each of the Three Countries

		Behavioral trust	Emotional close	Willing to help
U.S.A.				
	Attitudinal trust	.47***	.62***	.78***
	Behavioral trust		.31***	.43***
	Emotional close			.79***
China				
	Attitudinal trust	.57***	.72***	.78***
	Behavioral trust		.52***	.55***
	Emotional close			.71***
Japan				
	Attitudinal trust	.45***	.53***	.72***
	Behavioral trust		.19*	.39***
	Emotional close			.73***

Note. Statistical inference is based on Pearson's *r*. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table S11

National Scores for the Key Variables in Each Included Country

Country/Region Name	Cultural Zone	Family trust	Acquaitance trust	Stranger trust	In-group favoritism	Conflict Status	GINI	Governance Quality	Parasite Stress	Prevalence of Protestantism
Algeria	North Africa	3.82	2.69	1.66	0.68	2.38	35.30	-0.57	1.48	0.00
Andorra	Latin Europe	3.80	3.11	1.89	NA	NA	NA	1.23	-3.04	0.01
Argentina	Latin America	3.90	3.13	2.05	0.08	1.90	45.80	-0.66	0.73	0.01
Armenia	Eastern Europe	3.96	2.95	1.77	0.56	2.27	30.30	-0.31	-1.98	0.00
Australia	Anglo	3.81	3.38	2.35	-1.51	1.65	30.30	1.88	-2.59	0.23
Azerbaijan	Eastern Europe	3.47	2.36	1.37	1.25	2.29	33.70	-0.85	-1.39	0.00
Bahrain	Middle East	3.32	2.74	2.44	0.02	2.03	NA	0.67	-3.13	NA
Belarus	Eastern Europe	3.86	2.98	1.94	0.70	2.19	26.50	-1.14	-1.92	0.02
Brazil	Latin America	3.60	2.61	1.63	0.21	2.17	51.90	-0.10	3.75	0.03
Bulgaria	Eastern Europe	3.89	3.13	1.98	1.03	1.90	35.40	0.21	-2.70	0.00
Burkina Faso	Sub-Sahara Africa	3.79	2.73	2.01	0.95	2.06	39.50	-0.35	5.32	0.08
Canada	Anglo	3.81	3.43	2.40	-1.41	1.45	32.10	1.73	-3.26	0.15
Chile	Latin America	3.82	2.79	1.85	-0.12	1.58	52.10	1.37	-0.73	0.14
China	Confucian Asia	3.89	2.96	1.91	0.51	1.98	46.90	-0.42	1.45	0.03
Colombia	Latin America	3.77	2.70	1.66	0.16	2.76	53.50	-0.27	3.84	0.02
Cyprus	Middle East	3.86	2.97	1.60	0.88	1.85	34.80	1.01	-2.76	0.00
Ecuador	Latin America	3.77	2.33	1.72	0.89	2.27	48.50	-0.70	2.00	0.00
Egypt	Middle East	3.97	3.41	2.11	0.79	1.99	30.80	-0.31	0.66	0.00
Estonia	Nordic Europe	3.88	3.16	1.98	-1.06	1.70	32.90	1.06	-2.37	0.08
Ethiopia	Sub-Sahara Africa	3.86	2.80	2.08	0.99	2.44	33.00	-0.83	5.15	0.19
Finland	Nordic Europe	3.90	3.39	2.46	-1.16	1.43	26.80	2.10	-3.62	0.00
France	Latin Europe	3.74	3.62	2.31	-1.00	1.71	30.10	1.34	-2.50	0.02
Georgia	Eastern Europe	3.91	3.04	1.97	0.84	2.84	46.00	-0.58	-1.69	0.00
Germany	Germanic Europe	3.75	3.12	2.10	-1.19	1.48	27.00	1.66	-3.42	0.00
Ghana	Sub-Sahara Africa	3.57	2.70	1.84	-0.62	1.72	42.30	-0.24	4.28	0.57
Hong Kong	Confucian Asia	3.81	3.21	2.08	-0.24	1.61	53.70	1.83	NA	0.05
Hungary	Eastern Europe	3.85	3.12	2.18	0.19	1.58	24.70	0.91	-3.22	0.15
India	Southern Asia	3.80	2.98	2.07	0.34	2.36	33.60	-0.26	2.71	0.01
Indonesia	Southern Asia	3.79	3.05	2.00	0.62	1.98	36.80	-0.78	3.60	0.07
Iraq	Middle East	3.97	3.05	1.87	NA	3.51	30.90	-1.70	1.23	0.00
Italy	Latin Europe	3.86	2.72	1.93	0.00	1.65	31.90	0.68	-2.84	0.00
Japan	Confucian Asia	3.73	2.95	1.83	-0.92	1.36	37.90	1.21	-2.23	0.00
Jordan	Middle East	3.93	3.06	1.92	0.89	1.97	39.70	0.34	-0.89	0.00
Kazakhstan	Central Asia	3.91	3.00	1.84	0.64	2.02	28.90	-0.87	-1.94	0.01
Kuwait	Middle East	3.85	3.20	2.08	0.78	1.79	NA	0.68	-2.20	NA
Kyrgyzstan	Central Asia	3.94	2.82	1.80	0.45	2.30	33.40	-0.72	-1.54	0.00
Lebanon	Middle East	3.42	2.88	2.02	0.37	2.84	NA	-0.31	-1.33	0.01
Libya	North Africa	3.93	3.15	1.80	0.17	1.93	NA	-1.00	-0.53	0.00
Malaysia	Southern Asia	3.83	2.88	1.72	-0.25	1.72	46.20	0.50	1.64	0.02
Mali	Sub-Sahara Africa	3.90	3.12	2.23	1.10	2.24	40.10	-0.38	5.31	0.01
Mexico	Latin America	3.71	2.66	1.61	0.52	2.19	48.30	-0.08	1.80	0.00
Moldova	Eastern Europe	3.78	2.84	1.71	0.00	2.09	33.00	-0.60	-2.05	0.03
Morocco	Middle East	3.89	3.03	1.83	1.43	1.95	40.90	-0.10	-0.12	0.00
Netherlands	Germanic Europe	3.54	3.11	2.08	-1.94	1.61	25.10	1.86	-3.28	0.04
Nigeria	Sub-Sahara Africa	3.87	2.77	1.91	0.26	2.72	43.70	-1.35	6.18	0.25
Norway	Nordic Europe	3.90	3.59	2.67	-1.65	1.34	26.80	1.81	-3.35	0.63
Pakistan	Southern Asia	3.79	2.86	2.05	-0.32	2.69	29.60	-0.92	1.58	0.00
Palestine	Middle East	3.85	2.85	1.76	NA	2.83	35.50	-0.44	NA	0.00
Peru	Latin America	3.69	2.41	1.42	0.05	2.05	45.30	-0.21	2.36	0.11
Philippines	Southern Asia	3.84	2.96	1.95	0.69	2.39	46.00	-0.48	1.64	0.02
Poland	Eastern Europe	3.69	2.95	2.06	0.54	1.69	32.40	0.44	-3.06	0.01
Qatar	Middle East	3.89	3.31	2.10	0.01	1.69	41.10	0.38	-1.57	NA
Romania	Eastern Europe	3.75	2.55	1.69	0.18	1.61	27.30	-0.09	-1.98	0.04
Russia	Eastern Europe	3.88	3.02	1.83	0.50	2.78	42.00	-0.57	0.09	0.01
Rwanda	Sub-Sahara Africa	3.71	3.00	2.25	0.34	2.03	46.80	-0.65	3.72	0.25
Serbia	Eastern Europe	3.91	3.11	2.01	1.00	2.11	38.70	-0.55	-2.58	0.01
Singapore	Confucian Asia	3.79	3.20	2.14	-0.04	1.67	46.40	1.98	-1.76	0.10
Slovenia	Eastern Europe	3.82	3.00	1.74	0.21	1.49	23.70	0.93	-3.17	0.01
South Africa	Anglo	3.76	2.86	2.18	-0.53	2.41	62.50	0.41	2.81	0.20
South Korea	Confucian Asia	3.83	2.96	1.90	0.35	1.69	30.20	0.69	-0.29	0.22
Spain	Latin Europe	3.92	3.26	2.17	-0.34	1.68	35.90	1.27	-2.15	0.01
Sweden	Nordic Europe	3.90	3.44	2.60	-2.32	1.47	24.90	1.93	-3.31	0.00
Switzerland	Germanic Europe	3.80	3.31	2.44	-1.17	1.47	28.70	1.87	-3.03	0.38
Taiwan	Confucian Asia	3.84	3.14	2.14	0.20	1.78	33.80	1.02	NA	0.02
Thailand	Southern Asia	3.81	2.83	1.88	0.36	2.42	48.40	0.07	2.97	0.00
Trinidad	Latin America	3.64	2.94	1.79	-0.30	2.23	NA	0.17	0.32	0.42
Tunisia	North Africa	3.94	3.00	1.69	0.56	1.80	40.00	0.10	-0.62	0.00
Turkey	Middle East	3.94	3.01	1.87	0.29	2.40	40.20	0.01	-0.18	0.00
Ukraine	Eastern Europe	3.84	3.01	2.03	0.24	2.10	28.20	-0.68	-1.33	0.01
United Kingdom	Anglo	3.83	3.49	2.38	-1.39	1.80	32.40	1.78	-3.49	0.25
United States	Anglo	3.66	3.22	2.22	-1.51	2.23	45.00	1.63	-1.74	0.27
Uruguay	Latin America	3.80	2.93	2.02	0.58	1.61	45.30	0.51	-1.98	0.01
Uzbekistan	Central Asia	3.97	3.00	1.69	0.98	2.38	36.80	-1.33	-1.46	0.00
Vietnam	Southern Asia	3.88	2.85	2.10	0.47	1.72	37.60	-0.59	2.11	0.01
Yemen	Middle East	3.92	3.04	1.96	0.51	2.35	37.90	-1.03	1.68	0.00
Zambia	Sub-Sahara Africa	3.59	2.67	1.75	0.81	1.86	57.50	-0.57	4.18	0.46
Zimbabwe	Sub-Sahara Africa	3.78	2.76	1.71	-0.04	2.51	50.10	-1.70	3.16	0.68

Note. The prevalence of Protestantism was square-root-transformed in our analyses.

Table S12

Comparisons of the Explanatory Power of National Collectivism against Other Country-Level Moderators

Country-level moderator	ΔAIC	ΔBIC	Likelihood ratio
The main comparisons			
COL vs. governance	-11.00	11.00	14.98***
COL vs. conflict	-30.00	-7.90	33.88***
COL vs. GINI	-42.00	-20.00	45.98***
COL vs. parasite stress	-39.10	-16.90	42.92***
COL vs. Protestantism	-41.10	-19.20	45.10***
Additional comparisons			
COL vs. religiosity	-30.10	-8.20	34.02***
COL vs. the Church	-18.30	3.60	22.25***
COL vs. kin intensity	-37.50	-15.60	41.53***

Note. COL = Societal in-group favoritism. In each row, we compared statistics of model-fit between two models—a cross-level model with both societal in-group favoritism and a competing variable as the moderators and a cross-level model with only the competing variable as the moderator. For the main comparisons, the trust outcome was regressed on societal in-group favoritism, governance quality, conflict status, GINI, parasite stress, and Protestantism simultaneously, controlling for their common variances; for additional comparisons, the trust outcome was regressed on these key national predictors as well as religiosity, the exposure to the Western Church, and kinship intensity simultaneously. A negative ΔAIC or ΔBIC, as well as a significant likelihood ratio, indicates that societal in-group favoritism improves the model's explanatory power over its competitor. If one of these fit statistics disagreed with the other, we relied on the majority of these statistics to determine a better-fit model. *** $p < .001$.

Table S13

Comparisons between Results of Two-Level and Three-Level Multilevel Modeling in Study 3

Outcome: Attitudinal trust	Two-level	Three-level
Intercept	3.79***	3.79***
Relational distance	-.91***	-.91***
COL	.02	.02
Relational distance × COL	-.12***	-.12***
Model fit		
AIC	896708.20	882043.80
BIC	896851.10	882197.70

Note. COL = Societal in-group favoritism. The main effects of governance quality, GINI, conflict status, pathogen prevalence, and Protestantism were controlled. A smaller AIC or BIC indicates a better-fit model. *** $p < .001$.

Table S14

Provincial Scores for the Key Variables in Each Included Chinese Province

Province name	Kin trust	Acquaintance trust	Stranger trust	Collectivistic orientations	Incidence rates of HCV (per 100, 000 persons)	Per Capita Disposable Income	Government by law	GINI
Anhui	4.34	2.99	2.24	3.59	3.14	16770.80	199.56	0.38
Beijing	4.30	3.03	2.15	3.56	7.57	44592.20	224.18	0.27
Fujian	4.41	3.04	2.18	3.54	3.73	23317.72	197.06	0.37
Gansu	4.30	2.89	1.78	3.70	21.02	12201.90	199.09	0.44
Guangdong	4.17	3.06	2.06	3.51	10.79	25654.86	234.43	0.39
Guangxi	4.20	2.85	1.80	3.50	13.41	15504.27	198.18	0.42
Guizhou	3.76	3.01	2.25	3.55	4.95	12383.58	214.66	0.43
Hebei	4.33	2.78	1.74	3.65	4.64	16651.71	171.18	0.33
Henan	4.59	2.93	1.94	3.60	21.11	15674.55	194.18	0.37
Heilongjiang	4.13	2.70	1.55	3.93	11.73	17300.16	214.83	0.35
Hubei	4.34	2.99	2.14	3.61	6.53	18260.42	184.98	0.36
Hunan	4.27	2.90	2.05	3.58	6.23	17648.04	207.87	0.39
Jilin	4.05	2.86	1.73	3.86	21.55	17400.74	184.49	0.40
Jiangsu	4.35	2.92	2.16	3.57	2.21	27162.39	214.17	0.34
Jiangxi	4.39	2.95	1.97	3.60	2.78	16756.99	222.75	0.35
Liaoning	4.20	2.63	1.74	3.76	11.12	22737.86	186.62	0.34
Inner Mongolia	4.12	2.82	1.78	3.74	15.96	20520.77	171.10	0.39
Ningxia	4.20	2.87	1.78	3.45	5.37	15933.88	154.99	0.42
Qinghai	4.16	2.71	1.83	3.71	20.79	14378.17	172.23	0.45
Shandong	4.46	3.25	2.23	3.61	1.54	20858.55	202.56	0.38
Shanxi	4.23	2.81	1.75	3.67	11.93	16503.90	157.30	0.39
Shaanxi	4.20	3.06	2.02	3.64	9.89	15867.76	168.50	0.44
Shanghai	3.81	2.71	1.76	3.50	2.09	46002.21	230.44	0.28
Sichuan	4.05	3.08	2.15	3.54	5.22	15733.65	221.14	0.38
Tianjin	4.31	2.92	1.87	3.51	3.88	28827.62	180.70	0.28
Yunnan	4.29	2.89	1.98	3.52	7.82	13857.55	190.83	0.37
Zhejiang	4.23	3.10	2.14	3.52	3.42	32656.55	214.13	0.35
Chongqing	4.26	3.05	1.99	3.55	5.14	18343.56	212.19	0.42

Note. Provincial collectivistic orientation and PCDI were log-transformed in our analyses. We utilized the "government by law" index to assess each province's governance quality.

Table S15

Comparisons of the Explanatory Power of Provincial Collectivism against Governance Quality and HCV Prevalence

Provincial-level moderator	ΔAIC	ΔBIC	Likelihood ratio
COL vs. governance	-2.31	6.08	4.30*
COL vs. HCV	.06	17.83	2.94

Note. COL = Provincial collectivistic orientation. The trust outcome was regressed on provincial collectivistic orientation, governance quality, PCDI, GINI, and HCV prevalence simultaneously, controlling for their common variances. * $p < .05$.

Table S16

Comparisons between Results of Two-Level and Three-Level Multilevel Modeling in Study 4

Outcome: Attitudinal trust	Two-level	Three-level
Intercept	3.19	3.29
Relational distance	1.11	1.09
COL	1.48	1.38
Relational distance ×COL	-4.07*	-4.04*
Model fit		
AIC	85131.70	83445.67
BIC	85232.30	83554.65

Note. COL = Provincial collectivistic orientation. The main effects of governance quality, PCDI, GINI, and HCV were controlled. * $p < .05$.

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