

Relational mobility predicts social behaviors in 39 countries and is tied to historical farming and threat

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Biologists and social scientists have long tried to understand why some societies have more fluid and open interpersonal relationships, and how those differences influence culture. This study measures relational mobility, a socioecological variable quantifying voluntary (high relational mobility) versus fixed (low relational mobility) interpersonal relationships. We measure relational mobility in 39 societies and test whether it predicts social behavior. People in societies high in relational mobility report more proactive interpersonal behaviors (e.g., self-disclosure and social support) and psychological tendencies that help them build and retain relationships (e.g., general trust, intimacy, self-esteem). Finally, we explore ecological factors that could explain relational mobility differences across societies. Relational mobility was lower in societies that practiced settled, interdependent subsistence styles, such as rice farming, and in societies that had stronger ecological and historical threats

relational mobility | culture | socioecology | multi-country | interpersonal relationships

In some societies, relationships are mostly fixed. People have stable and long-lasting relationships, but they have little choice when it comes to friends, family, and romantic partners. Other societies work more like free agent markets. Relationship options are abundant, meaning people can freely seek out new partners and leave old friends behind. For decades sociologists (1), economists (2), psychologists (3), and anthropologists (4) have tried to understand why societies have different relationship “markets” and how these differences set the ground rules for cooperation, social exchange, and norms. Behavioral ecologists have found that fluid social markets have more partner choice, which increases cooperation in humans (5) and even birds and insects (6).

Within this backdrop, we introduced the concept of *relational mobility* to quantify variance in partner choice in human societies [for reviews, see (7) and (8)]. Relational mobility is a socioecological variable (9) that represents how much freedom and opportunity a society affords individuals to choose and dispose of interpersonal relationships based on personal preference (7, 10). Societies with low relational mobility have less flexible interpersonal relationships and networks; people form relationships based on circumstance rather than active choice. In these societies, relationships are more stable and guaranteed, but there are fewer opportunities to find new relationships or leave unsatisfying ones (11, 12).

In contrast, societies with high relational mobility give people choice and freedom to select and dispose of interpersonal relationships, which are based on mutual contract and are less

guaranteed (12). High relational mobility societies are akin to open, choice-laden biological markets (5, 6), where people select partners based on self-interest (13). A few early studies have found that relational mobility is high in North America and low in Japan and Hong Kong in East Asia, as well as Ghana in West Africa (7, 14, 15).

In a sense, relational mobility sets the “rules of the game” for social relationships. When a society sets a particular level of relational mobility, it makes certain behaviors and psychological tendencies more or less adaptive. Indeed, studies have found that differences in relational mobility can explain societal differences such as generalized trust, self-enhancement, self-disclosure, intimacy, and need for uniqueness (7). In this way, previous studies have shown that relational mobility drives differences between societies in how people act, think, and feel (8, 16).

Despite a recent surge in interest in relational mobility, there are two important questions that researchers have yet to address. First, no work has explored antecedents of relational mobility—that is, why it is higher in some societies and lower in others. Second, a majority of previous studies exploring outcomes of relational mobility have been dual-country, generally between the US/Canada and Japan and Hong Kong. This raises

Significance

Biologists and social scientists have long tried to understand why some societies have more fluid and open interpersonal relationships—differences in relational mobility—and how those differences influence individual behaviors. We measure relational mobility in 39 societies and find that relationships are more stable and hard to form in East Asia, North Africa, and the Middle East, while they are more fluid in the West and Latin America. Results show relationally mobile cultures tend to have higher interpersonal trust and intimacy. Exploring potential causes, we find greater environmental threats (like disease and warfare) and sedentary farming were associated with lower relational mobility. Our society-level index of relational mobility for 39 societies is a resource for future studies.

Reserved for Publication Footnotes

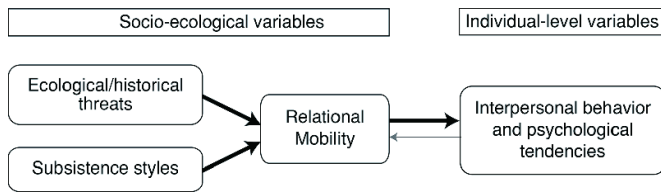


Fig. 1. Overall systems view of relational mobility as a socio-ecological variable.

the question of whether the processes identified in previous dual-country studies exist beyond the oft-documented and potentially idiosyncratic East-West dichotomy.

This study tests these questions. First, we measure relational mobility in 39 societies around the world. Second, we explore antecedents—the factors that might cause societies to be higher or lower in relational mobility. Third, we perform a number of confirmatory tests on consequences of relational mobility that previous studies have found. These analyses test the idea that relational mobility encourages certain behaviors and psychological tendencies across a wide range of disparate countries and regions. Finally, we test the entire theory in a multi-level model of relational mobility that outlines links between distal environmental and relational structures at the societal-level, and proximal human behaviors and psychology at the individual-level (Fig. 1).

Results

Cross-cultural validity of measures. One concern in cross-cultural studies is whether we can measure constructs accurately across cultures and languages. Data from scales used in our multi-country survey evidenced reliability, structural equivalence, and validity across societies (SI Appendix, Section 1.2). All scales showed partial scalar invariance, indicating that participants in different countries responded to survey items in similar ways and we can meaningfully compare scale averages across societies. The relational mobility scale (10; SI Appendix, Table S1) showed high within-nation agreement, ($M_{\text{rwg}(j)} = 0.92$, $SD = 0.02$, $\text{Min} = 0.87$), high variability between different societies [$ICC(1) = 0.09$], and highly reliable society-level means [$ICC(2) = 0.98$; Table 1]. In short, these results suggest that people within each society tended to agree about how mobile their society is and that societies differ meaningfully in how relationally mobile they are.

Relational mobility's convergence and antecedents. Below, we use publically available data and our own in-survey data to run a battery of exploratory tests examining the convergent validity and antecedents of relational mobility. For all exploratory analyses, we provide bootstrapped (5,000 samples) bias-corrected confidence intervals. p -values are also given to identify potential research goals for follow-up studies, but do not indicate confirmatory hypothesis testing results.

Convergent validity of the relational mobility measure. The relational mobility scale taps into respondents' perceptions of the opportunity and choice people have in their interpersonal relationships in their society. Are people's perceptions accurate? We found that the societal-level relational mobility scores were correlated with other variables that reflect opportunity and freedom for relationships in societies. Relational mobility was associated with such variables as the justifiability of divorce [$r = 0.51$ (95%BCaCI = 0.18, 0.79), $p = 0.007$], the belief that marriage is outdated [$r = 0.46$, (95%BCaCI = 0.11, 0.72), $p = 0.033$], attempts to poach romantic partners for long or short-term relationships for women as well as men ($r_s \geq 0.55$, $p_s \leq 0.098$), lower importance placed on job security [$r = -0.58$, (95%BCaCI = -0.24, -0.86), $p = 0.029$], and residential mobility [$r = 0.53$, (95%BCaCI = 0.02, 0.83), $p = 0.036$; SI Appendix, Table S6]. Furthermore, in multi-level analyses, relational mobility accounted for 18% of societal variance in how many romantic partners respondents had

in the past as measured in our survey ($\beta = 0.394$, $p = 0.028$; SI Appendix, Table S7). These results suggest that perceptions of relational mobility do reflect the reality of interpersonal relationships in different societies, providing evidence that the relational mobility measure is a valid measure (further discussion in SI Appendix, Section 1.7).

We then examined how relational mobility was associated with cultural variables that measure loose, independent versus tight, interdependent cultures measured in previous studies. We found relational mobility was correlated with loose cultural norms [$r = 0.65$ (95%BCaCI = 0.47, 0.83), $p = 0.001$], openness to multiple religious viewpoints [religious syncretism; $r = 0.50$ (95%BCaCI = 0.21, 0.77), $p = 0.009$], independent self-construal [$r = 0.76$ (95%BCaCI = 0.07, 0.99), $p = 0.050$], less hierarchy [$r = -0.46$ (95%BCaCI = -0.73, -0.13), $p = 0.041$], valuing competition and personal improvement [performance orientation; $r = 0.42$ (95%BCaCI = 0.18, 0.65), $p = 0.029$], and less fate-control [$r = -0.51$ (95%BCaCI = -0.73, -0.23), $p = 0.02$; SI Appendix, Table S8]. Relational mobility was also correlated with socio-political variables such as democracy [$r = 0.42$ (95%BCaCI = 0.13, 0.68), $p = 0.009$], political rights [$r = 0.34$ (95%BCaCI = 0.02, 0.64), $p = 0.043$], and civil liberties [$r = 0.44$ (95%BCaCI = 0.15, 0.70), $p = 0.008$; SI Appendix, Table S6]. The fact that relational mobility is correlated with these concepts gives evidence of concurrent validity for the relational mobility scale as a measure of the opportunity and freedom of relational choice within a society. These correlations suggest that places with higher relational mobility tend to have cultures that emphasize individual autonomy toward relationships and group memberships.

The distribution of relational mobility around the world. Overall, relational mobility was high in North America and low in East Asia, which replicates previous findings. We also found that Western Europe had high relational mobility, as did Latin America, whereas the Middle East, North Africa, and South Asia had lower relational mobility. Relational mobility was highest in Mexico and Puerto Rico, and lowest in Japan and Malaysia (Table 1, Figure 2).

Antecedents of relational mobility. Next we explored factors that could cause differences in relational mobility. We first theorized that relational mobility would be lower in societies with more interdependent subsistence styles. On the one hand, farming cultures tend to be more sedentary and interdependent, with stable communities and labor exchange that put people in tight relationships with reciprocal duties (17). Among different crops, paddy rice is particularly interdependent, requiring tight coordination of labor and irrigation (18).

On the opposite side of the spectrum is herding. Herders move frequently, meaning they have fewer stable, long-term relationships and more opportunities to form and break relationships. Studies have shown that herding cultures are more individualistic than nearby farming cultures (19). We found that societies that have historically devoted more crop land to paddy rice had lower relational mobility [$r = -0.48$ (95%BCaCI = -0.70, -0.17), $p = 0.003$], and societies with more herding land had higher relational mobility [$r = 0.52$ (95%BCaCI = 0.29, 0.71), $p = 0.001$]. When we combined subsistence styles into a single index (see SI Appendix, Section 1.5.3), results confirmed that cultures that practiced more interdependent subsistence styles have lower relational mobility [$r = -0.63$ (95%BCaCI = -0.80, -0.40), $p < 0.001$] (Figure 3; SI Appendix, Table S10).

Next, we theorized that relational mobility should be lower in societies that have acute historical and ecological threats. Research suggests that a basic human response to threat is group cohesion and cooperation (20, 21), strong norms (22), and insularity (23). In short, regions that have faced more threats tend to have limited community sizes and less openness to outsiders. Thus, we

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Table 1.

Sample characteristics of the 39 countries and regions.

Country/region ^a	Facebook penetration ^b	Survey language	Number of participants ^c			Mean age (±SD)		Percent Female ^d		Relational mobility means	
			Friend	Romance	Total			Latent ^e	Raw ^f		
Australia ²	59%	English	207	129	336	24.2	(12.0)	78.9%	.138	4.308	
Brazil ^{3,4}	47%	Portuguese	276	223	499	22.4	(9.6)	92.6%	.203	4.419	
Canada ^{2,4}	56%	English	225	193	418	38.8	(20.3)	84.7%	.175	4.404	
Chile ⁵	60%	Spanish	106	360	466	30.8	(13.2)	91.0%	.109	4.300	
Colombia ⁵	43%	Spanish	244	466	710	27.1	(10.5)	85.9%	.199	4.483	
Egypt ^{3,4}	23%	Arabic	122	106	228	26.2	(10.9)	64.8%	-.194	3.971	
Estonia ^{3,4}	40%	Estonian	178	249	427	30.1	(12.9)	95.1%	-.024	4.233	
France ^{3,4}	47%	French	299	350	649	27.4	(12.2)	91.0%	.213	4.451	
Germany ^{3,4}	34%	German	164	231	395	23.8	(8.2)	96.5%	-.011	4.194	
Hong Kong ^{3,4}	65%	Chinese	206	144	350	27.0	(12.4)	83.7%	-.338	4.043	
Hungary ³	48%	Hungarian	99	225	324	34.0	(15.6)	89.8%	-.387	3.893	
Israel ³	54%	Hebrew	166	193	359	20.0	(4.8)	93.9%	.088	4.336	
Japan ^{3,4}	17%	Japanese	481	305	786	31.6	(12.5)	77.1%	-.414	3.934	
Jordan ^{3,4}	47%	Arabic	130	169	299	29.0	(10.6)	73.2%	-.341	3.960	
Lebanon ⁵	47%	Arabic	187	108	295	29.8	(12.0)	75.3%	-.163	4.079	
Libya ⁵	26%	Arabic	289	116	405	26.0	(9.4)	59.3%	-.255	4.015	
Malaysia ³	55%	Malay, Eng., Chinese	184	121	305	24.3	(8.6)	91.1%	-.390	3.886	
Mauritius ^{3,4}	38%	French	188	368	556	29.3	(11.2)	86.1%	.059	4.385	
Mexico ⁵	46%	Spanish	322	360	682	27.3	(12.0)	88.9%	.359	4.607	
Morocco ^{3,4}	22%	Arabic	267	72	339	22.2	(5.6)	77.3%	-.139	4.062	
Netherlands ^{3,4}	54%	Dutch	222	229	451	23.4	(10.2)	97.3%	.197	4.448	
New Zealand ²	59%	English	255	212	467	27.8	(14.4)	92.1%	.083	4.287	
Palestinian Territories ⁵	34%	Arabic	283	75	358	23.2	(9.6)	54.5%	-.269	3.972	
Philippines ²	38%	English	81	226	307	28.9	(11.4)	95.4%	-.083	4.158	
Poland ^{3,4}	32%	Polish	355	95	450	21.2	(6.4)	97.1%	.050	4.415	
Portugal ³	49%	Portuguese	168	157	325	25.6	(11.9)	95.1%	.000	4.236	
Puerto Rico ⁵	51%	Spanish	63	243	306	45.8	(13.4)	89.5%	.308	4.603	
Singapore ^{3,4}	67%	English	223	96	319	30.0	(14.1)	87.1%	-.137	4.133	
South Korea ⁶	28%	Korean	174	169	343	38.0	(14.0)	41.1%	-.007	4.089	
Spain ⁵	43%	Spanish	183	361	544	38.1	(14.9)	91.9%	.128	4.415	
Sweden ^{3,4}	55%	Swedish	159	234	393	32.9	(16.6)	96.7%	.171	4.364	
Taiwan ³	66%	Chinese	235	74	309	27.2	(14.5)	93.2%	-.294	4.118	
Trinidad and Tobago ²	41%	English	298	185	483	32.1	(11.5)	91.5%	.164	4.421	
Tunisia ³	42%	Arabic	206	130	336	23.0	(7.1)	88.4%	-.222	3.954	
Turkey ^{3,4}	52%	Turkish	334	137	471	25.1	(13.0)	93.2%	-.060	4.122	
Ukraine ³	26%	Ukrainian	330	581	911	31.0	(10.4)	95.5%	.053	4.236	
UK ^{3,4}	58%	English	197	189	386	37.8	(16.5)	90.7%	.044	4.315	
USA ^{1,2,4}	58%	English	104	256	360	25.8	(12.9)	84.7%	.182	4.382	
Venezuela ⁵	38%	Spanish	348	334	682	30.9	(13.7)	79.3%	.226	4.508	

Notes. ^a Data collection: ¹ 2014 Oct 3 – 10, ² 2014 Nov 10 -17, ³ 2015 Feb 10 – 18, ⁴ 2015 May 19 – 27, ⁵ 2015 Jul 26 – Aug 2, ⁶ 2016 Jun 3 – 12. ^b As of Jan 2015 (37). ^c “Friend” refers to where target of dependent variables was respondents’ best friend, “Romance” is where target was romantic partner (see SI Appendix Section 1.1 and 1.2). ^d See SI Appendix Section 1.1.1 for discussion on gender. ^e Portugal sample = 0.000, response style adjusted (see SI Appendix Section 1.2.3). ^f Raw means are provided for reference only.

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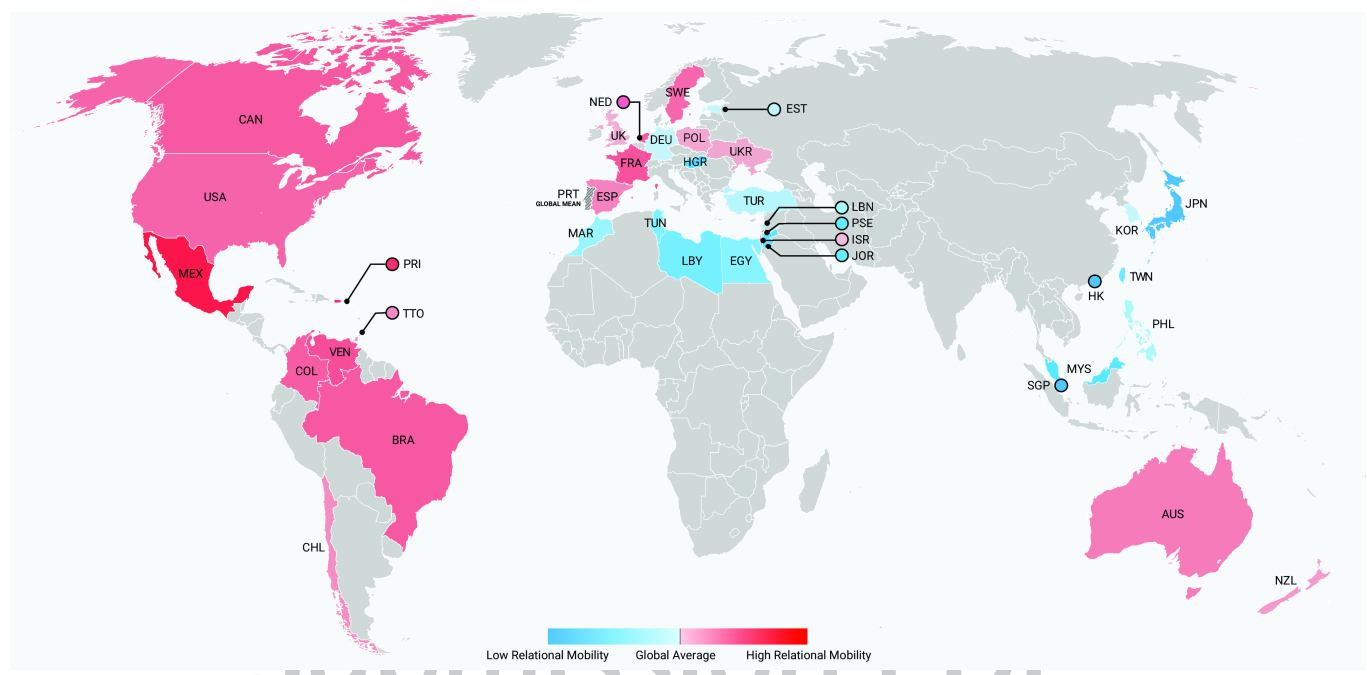


Fig. 2. Relational mobility society-level latent means in visual format. Blue indicates societies lower in relational mobility than the mid-point (Portugal). Red indicates societies higher in relational mobility than the mid-point. Fully interactive visualizations available online at <http://lynx.let.hokudai.ac.jp/~myuki/relational-mobility-explorer/>

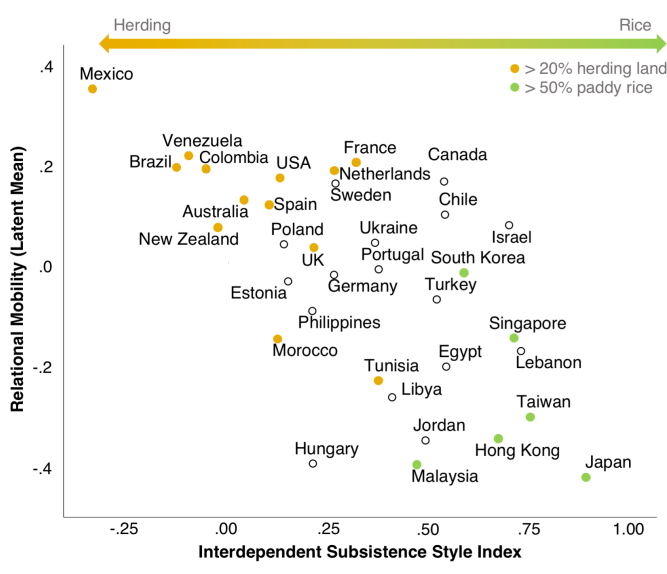


Fig. 3. Relational mobility is lower in societies that traditionally practiced more settled, interdependent subsistence styles. The index incorporates the three most widely studied subsistence styles in cross-cultural psychology: herding (relatively mobile and independent), wheat farming (more settled and interdependent), and paddy rice farming (most settled and interdependent).

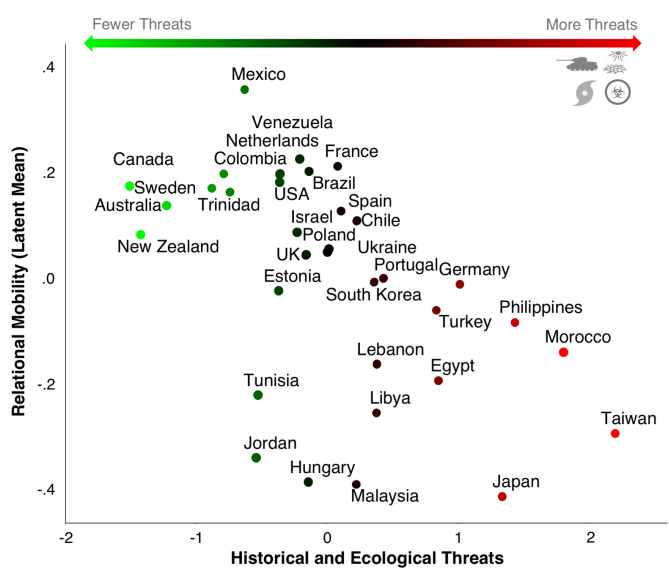


Fig. 4. Relational mobility is lower in countries that had higher historical threats, such as natural disaster, disease, greater pressure on resources, and more territorial threats. See SI Appendix Section 1.4 for how we created the index.

expected relational mobility would be lower in environments with high ecological threat.

Results showed that, indeed, relational mobility was lower in regions with critical environment and health vulnerabilities, including geoclimate harshness [$r = -0.45$ (95%BCaCI = -0.63, -0.23), $p = 0.018$], historical prevalence of pathogens [$r = -0.28$ (95%BCaCI = -0.55, -0.02), $p = 0.090$], lives lost to tuberculosis [$r = -0.38$ (95%BCaCI = -0.59, -0.15), $p = 0.019$], and population pressure, including population density both in AD1500 [$r = -0.39$ (95%BCaCI = -0.62, -0.11), $p = 0.047$] and presently ($r =$

-0.39 (95%BCaCI = -0.60, -0.14), $p = 0.029$]. Countries that were poorer historically (lower GDP per capita in 1950) were less relationally mobile [$r = 0.51$ (95%BCaCI = 0.33, 0.69), $p = 0.002$] (SI Appendix, Table S10). We combined a number of these historical and ecological threats to form a composite (see SI Appendix, Section 1.4), and this predicted relational mobility well, even when taking into account GDP per capita [$r = -0.54$ (95%BCaCI = -0.70, -0.38), $p < 0.001$; Figure 4; “Ecological and Historical Threat” in SI Appendix, Table S10].

Outcomes of relational mobility. Based on previous dual-country studies, we tested a number of confirmatory hypotheses about the psychological and behavioral outcomes of relational

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mobility in the 39-society dataset. We theorize that generalized trust (10, 24) and self-esteem (25) should be higher in relationally mobile societies because they give people confidence to approach new, desirable people in an open and competitive interpersonal marketplace (3, 7, 8). Hence, trust and self-esteem help people achieve the task of *acquiring* desirable relationships (16). Another consequence is that friends tend to be more similar to each other (higher homophily) in relationally mobile societies because there are more opportunities to find like-minded friends and leave relationships if people's interests diverge (26).

There is some prior evidence that people in relationally mobile societies also share personal information more quickly [self-disclosure; (27)], give social support more frequently (8), and report higher intimacy with romantic partners (28). These "pro-active" tendencies help bind partners together, increasing the cost for either partner to pursue attractive alternatives (27). In other words, these tendencies help people *retain* relationships. In low relational mobility societies, relationships are stable and more difficult to change, so the task of retaining relationships is less important.

In societies with higher relational mobility, people had more trust in strangers [$r = 0.36$ (95%BCaCI = 0.03, 0.63), $p = 0.046$] and higher self-esteem [$r = 0.66$ (95%BCaCI = 0.28, 0.83), $p < 0.001$] (SI Appendix, Table S8). Relational mobility also explained up to 30% of between-country variance in respondents' individual-level similarity between friends and romantic partners (SI Appendix, Table S7). Self-disclosure and intimacy towards a close friend or romantic partner were also much higher in relationally mobile societies, with relational mobility explaining up to 54% of the variance between societies in these two dependent variables (SI Appendix, Table S9). Relationally mobile societies also reported more willingness to help out a close friend in times of personal crises (social support), explaining 23% of variance in social support between societies (SI Appendix, Table S9).

Multi-level structural equation model. We brought the causes, relational mobility, and the social behavior outcomes together in a confirmatory multi-level structural equation model (SI Appendix, Figure S7). This model allows us to test the unique effect that each antecedent has on relational mobility, as well as relational mobility's unique effect on each interpersonal outcome. In this model, we used subsistence style and threat variables adjusted for GDP per capita to test effects independent from societies' differences in wealth (SI Appendix, Section 1.6). We also took into account individual-level variables such as gender, age, and household income. The models nested societies within geographical regions, which accounts for the fact that countries are not always truly independent observations (SI Appendix, Section 1.3.1).

Results for these confirmatory analyses confirmed the simple correlations presented above (SI Appendix, Table S11). Relational mobility was predicted independently by subsistence style ($\beta_s > -0.475$, $ps < 0.001$) and threats ($\beta_s > -0.273$, $ps < 0.05$). Among the outcomes, relational mobility predicted generalized trust, self-esteem, similarity, self-disclosure, intimacy, and social support (SI Appendix, Table S11).

Actual versus potential relational movement. One question that underpins this research is the distinction between actual movement and relational mobility, which measures how much choice and opportunity there is for movement between relationships in a society. We measure potential for relational movement using the relational mobility scale, which relies on peoples' perceptions of relational choice and opportunity. We found previously that perceptions of relational mobility were correlated with actual relational movement, so why not use these measures of actual movement, which should be more objective and accurate? For example, we could measure how many new acquaintances people have made in the last month or often people move homes

(16). At least for the relationship acquisition and retention behaviors that we measure in this study, we argue that relational mobility is critical and that actual movement does not adequately measure choice and opportunity.

As an illustration, imagine your friend is a naval officer, who could be ordered to transfer to another city at any time. The knowledge that your friend may soon be transferred to another city (quite possibly against their own preference) will probably not increase the likelihood that you'll try to work harder to retain that friend, such as by increasing intimacy or self-disclosing more. If your friend's moving away is determined by an outside force, then trying harder to retain the friendship would be useless. If, on the other hand, it is entirely up to your friend's choosing whether he moves away or not, then why not try to "convince" him to stay, through expressions of intimacy or disclosing secrets? If there is choice, the relationship-retention behaviors are adaptive. If there is no choice, investment is for naught.

We tested whether relational mobility is a stronger predictor of pro-active relationship behaviors than measures of actual movement. To do this, we re-ran the multi-level model, replacing relational mobility with measures of actual movement (residential mobility and self-reported number of acquaintances met in the last month). Table S13 in the SI Appendix finds that relational mobility more reliably predicted the outcomes in the model. Moreover, relational mobility was more reliably predicted by the theoretical antecedents. Naturally, relational mobility and actual movement between relationships will be correlated. However, this result suggests that freedom and choice in relationships are adding something above movement alone (see SI Appendix, Section 1.8 for more discussion).

Where does relational mobility sit in the causal chain? A critical reader might ask why we need to talk about relational mobility. The field already has concepts and measures such as individualism, tightness-looseness, and hierarchy. Does relational mobility add anything beyond these established concepts? Here we argue that 1) relational mobility is a stronger predictor of certain interpersonal outcomes and 2) as a socioecological factor, relational mobility can help explain why societies have certain cultural characteristics.

First, we tested whether relational mobility predicted the interpersonal outcomes measured in this study better than previously established cultural variables. We did this by predicting self-disclosure, intimacy, and trust from relational mobility versus cultural variables such as individualism, cultural tightness, and cultural self-construals (SI Appendix, Section 1.11.10 reports the full multi-level results). Overall, relational mobility held up well against these other variables, predicting the outcomes more consistently and strongly (SI Appendix, Table S16). This suggests that relational mobility holds unique predictive power beyond established concepts.

Next, we asked whether relational mobility sits higher in the causal chain of culture or if it is more of a downstream outcome. We argue that relational mobility sits higher in the causal chain, and can help explain why previous studies have found that threats (22, 29) and subsistence styles (18) affect culture. We reasoned that in response to threats and different subsistence styles (distal social ecologies), humans form community structures that afford varying degrees of opportunity and freedom in relationships (i.e., relational mobility, a proximal social ecology). This variance in relational mobility then impacts the self-concepts and other cultural characteristics of people that live in those environments (see SI Appendix, Section 1.11).

To test this, we ran mediation models where threats and subsistence style cause relational mobility, which then causes interdependent self-construals (18) and cultural tightness-looseness (22, 29) (SI Appendix, Section 1.11.9, Figure S8). Results showed a significant effect of threats and subsistence style to relational

mobility, then to self-construals and tightness-looseness. We also compared that to competing mediation models where threats and subsistence styles cause self-construals and tightness-looseness, which then cause relational mobility (SI Appendix, Figure S9). The data did not support models where relational mobility was a downstream consequence (SI Appendix, Table S15). Overall, the model results support the theory that relational mobility is a socioecological variable, impacting how humans think and act. At the same time, we readily accept that relational mobility is not the only important feature of the social environment. Clearly interdependent self-construals, norms, and other cultural settings influence behavior too.

Discussion. Overall, the findings are consistent with the theory that relational mobility makes certain behaviors and psychological tendencies more adaptive in any given society. In particular, the findings suggest that, as relational mobility increases, it becomes more adaptive to actively invest in building interpersonal relationships.

One particularly noteworthy finding was that Latin America was *high* in relational mobility. Latin Americans reported behavior and psychological tendencies (such as high general trust) that tend to occur with relational mobility. This is noteworthy because data suggesting that Latin America is collectivistic (30, 31) would not have predicted this. This finding might inspire researchers to delve deeper into how Latin America fits into the spectrum of human culture.

Ultimately, these results are correlational; they cannot prove that relational mobility *causes* these outcomes. Furthermore, reverse causality is also plausible—for example, trusting strangers could also make societies more relationally mobile. We can get more insight into cause and effect through experimental research [such as studies that manipulate relational mobility or people's perception of it (32)] and studies that track changes in the environment and mobility indicators over time [for examples, see (25, 33)]. Agent-based simulations can also help clarify whether these behaviors are adaptive.

Future large-scale studies on relational mobility can use data that are more representative of the population in each society

to test the generalizability of our findings. This not only applies to the exploratory nature of many of our analyses, but also to our sample's heavy skew towards females. SI Appendix Section 1.1.1 analyzes gender differences in detail and finds that gender explains only 0.04% of the variance in relational mobility scores. Individual-level age and income explained even less variance. This is plausible because participants describe the mobility of their society, not of their own mobility. However, the small samples of men make it difficult to fully test for gender differences.

This 39-society study presents the first large-scale survey of relational mobility around the world. The findings suggest that subsistence styles and environmental threats can explain some of the differences across societies in relationship style. The results also suggest that “free agent” relationship markets encourage proactive social behaviors like self-disclosure, intimacy, and generalized trust. We hope future studies can continue to bring together research in biological sciences, sociology, and cross-cultural psychology to better understand how humans structure their relationships, even while people move more of their social networks into the digital world.

Materials and Methods

We measured relational mobility by recruiting 16,939 people from 39 societies to a web survey between 2014 and 2016 (Table 1), approved by the Ethics Committee of the Center for Experimental Research in Social Sciences at Hokkaido University, Japan. Recruitment was via Facebook advertisements (SI Appendix, Section 1.1). Participants were directed to a landing page where they could inform themselves about the survey and provide their consent before continuing. We sampled societies based on (a) Facebook penetration rate (to maximize diversity in respondents within each country) and (b) capturing as much variance as possible in geography and cultural blocks.

Participants rated the relational mobility of their immediate society using Yuki et al.'s (2007) relational mobility scale (10; SI Appendix, Table S1), reported the number of new acquaintances met in the last month, how many romantic partners they've had, and completed demographic questions. They also completed measures of interpersonal intimacy (34, 35), self-disclosure (27), similarity (26), and social support in their relationship with either their closest friend or their romantic partner. Participants completed the survey in the majority language of their society (Table 1; SI Appendix, Section 1.2). We collected societal variables such as GDP per capita, cultural values, romantic partner poaching frequency, and other psychological and behavioral variables from public sources (SI Appendix, Tables S6, S8, and S10).

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