

DEVELOPMENT OF A SCALE TO MEASURE
PERCEPTIONS OF RELATIONAL MOBILITY
IN SOCIETY

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 experimental study using the prisoner's dilemma with variable
 dependence (in Japanese)
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 cooperation: An experimental study of the social exchange heuristic
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 SHIGERU TERAJ and TOSHIO YAMAGISHI**

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SHIGERU TERAJ, TOSHIO YAMAGISHI, and MOTOKI WATABE
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and MASAFUMI MATSUDA
- No. 21** **An experimental study of self-effacement and self-enhancement among the Japanese (in Japanese)**
NAOTO SUZUKI and TOSHIO YAMAGISHI
- No. 22** **Cultural relativity of cognition: Rethinking the Sapir-Whorf hypothesis (in Japanese)**
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SHIGEHITO TANIDA and TOSHIO YAMAGISHI

- No. 25** **Problems in the use of questionnaire scales in cross-cultural studies
(in Japanese)**
KOSUKE TAKEMURA and MASAKI YUKI
- No. 26** **Social learning as an uncertainty-reduction strategy: An adaptationist
approach (in Japanese)**
DAISUKE NAKANISHI, TATSUYA KAMEDA,
and MIZUHO SHINADA
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dilemma: An experimental study (in Japanese)**
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- No. 28** **Recognition of cooperators' and defectors' faces (in Japanese)**
SHIGEHITO TANIDA, ERI SHIMOMA, RIE MASHIMA, LILI MA,
and TOSHIO YAMAGISHI
- No. 29** **The emergence of indirect reciprocity:
Is the standing strategy the answer?**
NOBUYUKI TAKAHASHI and RIE MASHIMA
- No. 30** **Cross-cultural consistency in self-presentation in the self-evaluation
situation: A comparison of Japanese and Australian participants
(in Japanese)**
NAOTO SUZUKI, TOSHIO YAMAGISHI, MARGARET FODDY,
and TOKO KIYONARI
- No. 31** **Trust building via risk taking: A cross-societal experiment**
KAREN S. COOK, TOSHIO YAMAGISHI, COYE CHESHIRE,
ROBIN COOPER, MASAFUMI MATSUDA, and RIE MASHIMA
- No. 32** **Separating trust from cooperation in a dynamic relationship:
Prisoner's dilemma with variable dependence**
TOSHIO YAMAGISHI, SATOSHI KANAZAWA, RIE MASHIMA,
and SHIGERU TERAJ
- No. 33** **Does mere exposure enhance positive evaluation,
independently of stimulus recognition in Japan?**
KEIKO ISHII

- No. 34** **Are intergroup relations competitive in Japan?: A test of discontinuity effect in "collectivist" society (in Japanese)**
KOSUKE TAKEMURA and MASAKI YUKI
- No. 35** **Social construction of groups: Emergence of outgroup homogeneity effect (in Japanese)**
MAYUMI MIYAHARA and TOSHIO YAMAGISHI
- No. 36** **Social institutions and cultural differences in the mind (in Japanese)**
NAOTO SUZUKI, KOJI YAHARA, and TOSHIO YAMAGISHI
- No. 37** **Is beauty skin deep? : How physical attractiveness affects behavior in social exchange (in Japanese)**
CHISATO TAKAHASHI, SHIGEHITO TANIDA,
and TOSHIO YAMAGISHI
- No. 38** **The influence of intergroup competition belief on the cooperation toward a lower-status group in the Simulated International Society game (in Japanese)**
KUNIHIRO YOKOTA, MASAKI YUKI, and SUSUMU OHNUMA
- No. 39** **A social world for the rational tail of the emotional dog:
Roles of moral reasoning in group decision making**
MASANORI TAKEZAWA, MICHAELA GUMMERUM,
and MONIKA KELLER
- No. 40** **Selective attention to contextual information in Japan:
An examination in both visual and auditory modality**
KEIKO ISHII and SHINOBU KITAYAMA
- No. 41** **Developing a new framework of adaptive concession-making strategies:
An approach to behavioral game theory from psychology**
MASANORI TAKEZAWA
- No. 42** **False friends are worse than bitter enemies:
Altruistic punishment of in-group members**
MIZUHO SHINADA, TOSHIO YAMAGISHI, and YU OHMURA

- No. 43** **Sex, attractiveness, and cooperation in social exchange**
CHISATO TAKAHASHI, TOSHIO YAMAGISHI,
SHIGEHITO TANIDA, and SATOSHI KANAZAWA
- No. 44** **Does Trust Beget Trustworthiness?**
Trust and Trustworthiness in Two Games and Two Cultures
TOKO KIYONARI, TOSHIO YAMAGISHI, KAREN S. COOK,
and COYE CHESHIRE
- No. 45** **"Middle way" in social judgment (in Japanese)**
CHISATO TAKAHASHI
- No. 46** **Real Time Public Goods in Japan:**
Cultural and Individual Differences in Trust and Reciprocity
KEIKO ISHII and ROBERT KURZBAN
- No. 47** **General trust and social perception:**
Differences in sensitivity to information about others' disposition in
two cultures
KEIKO ISHII
- No. 48** **Cognitive and physiological evidence of fear contagion (in Japanese)**
RYO TAMURA and TATSUYA KAMEDA
- No. 49** **Attractiveness and cooperation in social exchange (in Japanese)**
CHISATO TAKAHASHI, SHIGEHITO TANIDA,
and TOSHIO YAMAGISHI
- No. 50** **Do forms and structures of exchange affect solidarity?**
NOBUYUKI TAKAHASHI and RIE MASHIMA
- No. 51** **Group-based Trust in Strangers: Evaluations or Expectations?**
MARGARET FODDY , MICHAEL J. PLATOW,
and TOSHIO YAMAGISHI
- No. 52** **The effect of commonality of group membership on cooperation in Japan**
and New Zealand (in Japanese)
NOBUHIRO MIFUNE and TOSHIO YAMAGISHI

- No. 53** **Culture and Visual Perception:
Does Perceptual Inference Depend on Culture?**
KEIKO ISHII, TAKAFUMI TSUKASAKI,
and SHINOBU KITAYAMA
- No. 54** **Bringing Back Leviathan into Social Dilemmas**
MIZUHO SHINADA and TOSHIO YAMAGISHI
- No. 55** **Why do third party punish?: Second-order cooperation of in-group
members (in Japanese)**
MIZUHO SHINADA and TOSHIO YAMAGISHI
- No. 56** **The structural features and the sense of acceptance in the internet
community: An explorative study using the evaluation of Bulletin
Board System (in Japanese)**
MIZUHO SHINADA, SHIGEHITO TANIDA, TOSHIO YAMAGISHI,
and ERI SANO
- No. 57** **Does Shared Group Membership Promote Altruism?
Fear, Greed and Reputation**
TOSHIO YAMAGISHI and NOBUHIRO MIFUNE
- No. 58** **Strategy versus Preference as Explanations of Culture-specific Behavior:
The Case of Preferences for Uniqueness and Conformity (in Japanese)**
TOSHIO YAMAGISHI, HIROFUMI HASHIMOTO,
and NAOTO SUZUKI
- No. 59** **Rejection of unintentionally unfair offers in an ultimatum game
(in Japanese)**
YUTAKA HORITA and TOSHIO YAMAGISHI
- No. 60** **Reciprocity and identity protection: Reasons for rejection in the ultimatum
game (in Japanese)**
YUTAKA HORITA and TOSHIO YAMAGISHI
- No. 61** **An Institutional Approach to Culture**
TOSHIO YAMAGISHI and NAOTO SUZUKI

- No. 62** **Effect of social context on middle-way judgments among the Japanese
(in Japanese)**
 NAOTO SUZUKI, CHISATO TAKAHASHI,
 and TOSHIO YAMAGISHI
- No. 63** **In-group bias in trusting behavior: A choice of allocator experiment with
minimal groups (in Japanese)**
 NAOTO SUZUKI, YUSUKE KONNO and TOSHIO YAMAGISHI
- No. 64** **Self-presentation in a closed society: Adaptive foundation of the
interdependent self (in Japanese)**
 NAOTO SUZUKI, CHISATO TAKAHASHI,
 and TOSHIO YAMAGISHI
- No. 65** **Ingroup cooperation and ingroup trust: self sustaining mechanism of the
generalized exchange system (in Japanese)**
 TOSHIO YAMAGISHI and TOKO KIYONARI
- No. 66** **Effects of direct and indirect exchange on trust of in-group members
(in Japanese)**
 TOKO KIYONARI, MARGARET FODDY, and TOSHIO YAMAGISHI
- No. 67** **Allocation of Attention by Cooperators and Defectors to the Prisoner's
Dilemma Payoff Matrix**
 TOSHIO YAMAGISHI and SHIGEHITO TANIDA
- No. 68** **A test of the "bounded generalized reciprocity" hypothesis with national
categories (in Japanese)**
 NOBUHIRO MIFUNE, YOHSUKE MAKIMURA,
 and TOSHIO YAMAGISHI
- No. 69** **Perception of the game situation in dictator and ultimatum games
(in Japanese)**
 HIROFUMI HASHIMOTO and TOSHIO YAMAGISHI
- No. 70** **Adaptive foundations of group-based reciprocity (in Japanese)**
 YUTAKA HORITA and TOSHIO YAMAGISHI

- No. 71 The role of intentions in third-party punishment (in Japanese)**
HARUTO TAKAGISHI, NOBUYUKI TAKAHASHI,
and TOSHIO YAMAGISHI
- No. 72 Comparison of the role of intentions in second-party and third-party
punishment (in Japanese)**
HARUTO TAKAGISHI and TOSHIO YAMAGISHI
- No. 73 The intercultural trust paradigm: Studying joint cultural interaction and
social exchange in real time over the internet**
CHISATO TAKAHASHI, TOSHIO YAMAGISHI, JAMES H. LIU,
FEIXUE WANG, YICHENG LIN, and SZIHSIEN YU
- No. 74 Cultural psychology and the mere exposure effect (in Japanese)**
KEIKO ISHII
- No. 75 Development of a Scale to Measure Perceptions of Relational Mobility
in Society**
MASAKI YUKI, JOANNA SCHUG, HIROKI HORIKAWA,
KOSUKE TAKEMURA, KOSUKE SATO, KUNIHIRO YOKOTA,
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DEVELOPMENT OF A SCALE TO MEASURE
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Abstract

In this paper we developed a scale to measure relational mobility, or the general amount of opportunities there are to form new relationships, when necessary, in a given society or social context. Depending on the nature of the particular society, network, or organization into which one is embedded, the number of opportunities individuals have to form new relationships can vary drastically. For example, while individuals living in North American societies are frequently faced with chances to form new relationships, this is not true in many Asian societies where interpersonal relationships tend to be pre-determined and stable. In order to capture variation in relational mobility between societies on a micro- and macro-level, we developed a scale to assess individuals' perceptions of relational mobility in their immediate social environment. Through two studies, we demonstrate the Relational Mobility Scale's reliability, structural validity, and construct validity in two cultures: Japan and the United States. We hope that the existence of a scale to measure relational mobility will promote further research investigating the influence of social structure on psychology and behavior.

‘Relational mobility’ refers to the amount of opportunities people have in a given society or social context to select new relationship partners when necessary. Depending on both the society in which an individual thrives and the situations which an individual is faced with, the ease of forming new relationships and moving between groups and relationship partners can vary greatly. While individuals in highly mobile situations are frequently faced with opportunities to choose new partners and can thus form and reform relationships as needed, individuals in low mobility situations tend to be firmly embedded in their social network and have few opportunities to venture outside of current relationships and select new interaction partners.

Differences in societal levels of relational mobility between Japan and the United States have been theorized in research by Yamagishi and his colleagues (Yamagishi, 1998; Yamagishi & Yamagishi, 1994; Yamagishi, Cook & Watabe, 1998), investigating differences in levels of generalized trust between Japan and the United States. In these studies, Yamagishi approaches cross-cultural differences in trust from the evolutionary/adaptationist perspective, suggesting that individuals’ levels of trust are adaptive strategies tailored to the differing social contexts in each country. In societies with high relational mobility, such as the United States, those who stay in committed relationships while forgoing more beneficial relationships must continually pay opportunity cost. The ability to trust and form relationships with outsiders thus becomes a trait of extreme importance in mobile societies, as trust serves to “emancipate” individuals from the confines of committed relationships when more advantageous relationships become available. On the other hand, because of the closed nature of relationships in Japanese society there is reduced need for generalized trust. Cross-societal differences in trust can thus be explained as adaptive strategies tailored toward the differing levels of relational mobility in each society.

Measuring Relational Mobility: The Relational Mobility Scale

There are many ways by which it may be theoretically possible to measure relational mobility. For instance, it may be possible to indirectly assess relational mobility through macro-level socio-ecological indices which are theoretically highly correlated with relational mobility, such as such as generalized trust, job turnover rates, divorce (and subsequent re-marriage) rates, average number of acquaintances, etc. in a particular country or region. These indices are often available to the public in the form of social surveys and demographic information published by local governments and research

institutions.

However, macro-level variables such as these tend to be problematic in the sense that they are often not fine enough to capture variation within a given population. Indeed, within any given ‘society,’ ‘region,’ or ‘culture,’ there can exist subtle micro-level differences in relational mobility. Even within the same society, different kinds of groups, networks, and social contexts affect levels of relational mobility, which in turn influence the adaptive implications of behaviors in these societies. Furthermore, variables such as divorce rate and job turnover rate may have little effect on the lives of younger members of the population who have yet to experience marriage or steady employment. Thus, we decided to develop the Relational Mobility Scale to assess respondents’ *perceptions* of the level of relational mobility in their immediate society and/or social context, in the hope that this measurement would prove useful in testing hypotheses regarding the ways in which psychology and behavior are affected and shaped by relational mobility. We assume that there are subtle variances in relational mobility in the micro-society surrounding each individual, and that individuals can recognize this fact within reasonable levels of precision.

Study 1: Construction and Validation of a scale to measure Relational Mobility

In this study, we attempted to construct and validate a scale to measure relational mobility, or the amount of general opportunities there are to form new relationships in a particular society or situation. For relationships in a society to be mobile, new interaction partners must be readily available, and people must have chances to select their own interaction partners. This is not the case in many societies where interaction partners tend to be pre-determined rather than choice-based (Adams & Plaut, 2003). In addition, people should be free to move between relationships when necessary. This movement between groups and relationships is essential to the concept of mobility, as people must have chances to free themselves from commitments when more profitable relationships become available. Again drawing from Yamagishi’s theory, the presence of increasingly profitable relationships, or opportunity cost, is what drives the movement between relationships within a society, as this movement in turn frees up network nodes for new agents to fill. From this logic, we created scale items to reflect 1) the general amount of opportunities to meet new interaction partners in the society, 2) opportunities for people to select their own relationships and groups, and 3) the tendency for individuals to be bound to current relationships or groups (reversed). Second, as our theoretical framework stems from

Yamagishi's theory on generalized trust between Japan and the United States, we expected that the relational mobility scores would be, as a whole, lower in Japan than in the United States.

Third, with regard to construct validity, we predicted that relational mobility scores would be positively correlated with generalized trust across cultures, in line with Yamagishi's emancipation theory of trust. Furthermore, as Yamagishi's theory posits that the difference in generalized trust between Japan and the United States is caused by the differing levels of opportunity costs and the resulting levels of relational mobility in each society, relational mobility scores should also be able to explain cultural differences in generalized trust between the United States and Japan.

Method

Participants

153 American (seventy-five men, seventy-seven women, 1 unknown; $M_{\text{age}}=21.58$, $SD_{\text{age}}=4.87$) and 149 Japanese undergraduates (fifty-eight men, eighty-nine women, 2 unknown; $M_{\text{age}}=20.51$, $SD_{\text{age}}=2.25$) participated in the study.

Measurements and procedure

The relational mobility scale was comprised of twelve items developed simultaneously in Japanese and English. The scale was designed to assess participants' views of the amount of mobility in the immediate society in which they live, specifically the opportunities for individuals in a society to meet and select new partners outside of committed relationships when beneficial to do so. The scale was constructed to assess participants' perceptions of relational mobility in their surrounding environment, by asking participants to answer each question regarding "people in general in their immediate society," rather than themselves personally. By "immediate society," we refer to the immediate network surrounding each individual rather than society on a national level.

Sample items for the relational mobility scale include "In most circumstances, it is easy for people to make new acquaintances," "For the most part, people are able to choose those who they interact with," and "Even though they might rather leave, people often have no choice but to stay in groups they don't like" (reversed) (See Table 2 for all items). Participants were administered the 12-item relational mobility scale together in a packet with several other measurements including generalized trust (Rotter, 1967; Yamagishi & Yamagishi, 1994) and demographic items. All measurements were made on

6-point scales.

Results and Discussion

We conducted a series of factor analyses on the original 12 items to determine if the factor structure of the scale would be comparable between cultures. Because we assumed that the components of relational mobility would be correlated, we conducted a principal components factor analysis with promax rotation by country. The results of the factor analysis indicated that the items loaded onto three factors in Japan, the first factor reflecting the amount of opportunities for people in general to meet new people, the second the tendency for people in general to be able to select their own relationships and groups, and the third reflecting the tendency for individuals to be bound to undesirable groups (i.e., to be bound to a current group when opportunity cost is present). The factor loadings for the final relational mobility scale items are shown in Table 1. The results of the factor analysis for American participants showed that Factor 1 (Opportunities to meet new people) was equivalent to its Japanese counterpart, while Factors 2 and 3 (The ability to select partners and the tendency for people to be bound to undesirable groups) loaded onto a single factor, suggesting that the two concepts are highly related in American society.

Next, we examined the reliability and means for the scale as a whole by country. The results are shown in Table 2. Reliabilities for relational mobility and generalized trust scales were high and satisfactory in both Japan and the United States. Furthermore, as predicted, means for the relational mobility scale as a whole were higher in the United States ($M = 3.98$, $SD = .61$) than in Japan ($M = 3.54$, $SD = .50$), $F(1, 298) = 44.11$, $p < .0001$, $\eta^2 = .13$. No significant effects of gender or ethnic background were observed. Consistent with previous studies (for a review see Yamagishi et al., 1998), generalized trust was higher in the United States than in Japan. In addition, as predicted, relational mobility was positively correlated with general trust in both countries ($r = .30$, $p < .01$ in Japan, and $r = .25$, $p < .001$ in the US). To further examine if cross-societal differences in generalized trust could be explained by differences in the level of relational mobility in society in accordance with Yamagishi's theory, as well as to demonstrate the relational mobility scale's validity, we conducted an analysis of mediation effects. As predicted, when relational mobility was introduced as a mediator, the effect of country on generalized trust disappeared (dropped from $\beta(298) = .14$, $p = .01$ to $\beta(298) = .03$, $p = .53$), and the effect of relational mobility alone remained significant, $\beta(298) = .29$, $p < .0001$. The results of Sobel's (1982) test indicated that this difference was completely mediated by

relational mobility, $z = 3.94$, $p < .0001$. This finding is consistent with Yamagishi & Yamagishi's (1994) hypothesis that Americans have higher general trust than Japanese because they live in a society with higher relational mobility.

Study 2: Refinements to the Relational Mobility Scale

In Study 1, we successfully constructed and validated a scale to measure perceptions of relational mobility. One possible criticism of this study, however, is that the scale may assess participants' *personal* relational mobility, rather than that of their immediate social environments. This may be problematic, as perceptions of one's own levels of relational mobility in comparison to others may be influenced by confounding variables such as the participant's popularity, personality, or agency. Thus, in Study 2, we attempted to improve the item wordings of relational mobility scale in order to ensure that participants would report their perceptions of relational mobility regarding the people around them, rather than themselves personally.

More specifically, we edited the items from Study 1 by changing the target which participants rated levels of relational mobility for from "people in general" to "they" or "these people," referring to people in general in the immediate environment surrounding each participant. By using this wording, we were able to emphasize the fact that we did not want participants to report their own levels of relational mobility, but that of the people around them in their particular micro-society. Example items include: "They have many chances to get to know other people", and "They can choose who they interact with."

Method

Participants

415 Japanese (225 men, 187 women, 3 unknown; $M_{\text{age}} = 19.48$, $SD_{\text{age}} = 1.09$) and 199 North American (77 men, 113 women, 9 unknown; $M_{\text{age}} = 19.32$, $SD_{\text{age}} = 1.75$) undergraduates participated in the study. All participants completed the revised version of the relational mobility scale, as well as demographic items. Furthermore, 310 of the Japanese participants and 180 of the American participants also completed a measure of generalized trust. Both generalized trust and relational mobility were measured on 6 point scales.

Results and Discussion

As in Study 1, we conducted a principle components factor analysis with promax rotation of the 12 new items of the relational mobility scale. This time, two factor

solutions were applicable in both Japan and the United States, and, while several items loaded onto both factors in the US data, the factor structures were nearly identical. Items and factor loadings in each country are shown in Table 3.

As shown in Table 4, when the scale means were compared between the United States and Japan, the results were just as predicted; relational mobility was higher in the United States ($M=4.42$, $SD=.82$) than in Japan ($M=3.69$, $SD=.60$), $F(1,609)=153.66$, $p<.0001$, $\eta^2=.202$, and the same was true for generalized trust, $M=3.81$ $SD=.81$ in Japan and $M=4.08$ $SD=.69$ in the US, respectively; $F(1,489)=14.75$, $p<.0001$, $\eta^2=.029$.

We then conducted a mediational analysis to determine if scores for the revised version of the relational mobility scale would successfully mediate cross-cultural differences in generalized trust. First, we ran a linear regression analysis with a dummy variable for country (0=Japan, 1=US) predicting generalized trust, and found significant results, $\beta=.17$, $p<.001$. Next, we included relational mobility scores as an additional independent variable in the same analysis. The results showed that relational mobility strongly and significantly predicted generalized trust, $\beta=.37$, $p<.0001$, and the effect of country completely disappeared, $\beta=-.01$, *ns*. The mediation effect was highly significant $z = 6.51$, $p<.0001$. These findings suggest cross-cultural equivalence and construct validity of the revised relational mobility scale.

A Suggestion for Users

The nature of the wording of the relational mobility scale created in this study makes it possible to specify the group for which perceptions of relational mobility are measured. For example, it would be possible to measure perceptions of relational mobility in specific groups or situations, by changing the subject of each item from “people” and “they” to the name of a specific group or target persons. For example, if one wanted to measure perceptions of relational mobility for the university that participants belong to, it may be possible to rephrase the first item (It is common for these people to have a conversation with someone they have never met before) to read “It is common for students in my university have a conversation with someone they have never met before.” In this way, the relational mobility scale may be used to measure the relational mobility of specific groups of interest to the researcher.

General Conclusion

In this paper, we successfully developed and refined a scale to measure perceptions of relational mobility in one’s immediate society or social context, as well as demonstrated the scale’s structural and construct validity in Japan and the United States.

The factor structure was comparable and reliability for the scale was high in both countries. Furthermore, as predicted, relational mobility was higher in the United States than in Japan, and the relational mobility scale was able to fully explain the cultural difference in generalized trust. Taken together, these results indicate that the relational mobility scale is an appropriate measure of individuals' perceptions of relational mobility in their immediate society.

However, as mentioned in the introduction, the relational mobility scale is not the only way of measuring relational mobility. For instance, one could refer to macro-level statistical indices that are available elsewhere, and examine how they are related to focal dependent variables. Another way would be to measure the size of participant's pools of possible interaction partners, numbers of new friends or acquaintances, number of groups participants belong to, the permeability of these group's boundaries, and so forth. While each of these variables comes with its own set of limitations, it would certainly be beneficial to use a variety of methods in combination to assess societal relational mobility.

The concept of relational mobility, based on Yamagishi's theory regarding opportunity cost and generalized trust, has broad implications for the study of culture and psychology in general. The current scale makes it possible to quantitatively assess relational mobility of a diverse variety of social groups, categories, and regions, through the eyes of the perceiver. Relational mobility has the potential to explain a variety of differences in behaviors and psychological processes which exist between different societies. Indeed, several recent studies have found that variables similar to relational mobility have a strong effect on behavior and psychology. For example, Oishi and his colleagues have found that residential mobility can influence self concepts (Oishi, Lun, & Sherman, 2007) as well as helping behavior (Oishi et al., 2007). Furthermore, Adams and his colleagues (Adams, 2005; Adams & Plaut, 2003) have found that friendships tend to differ between societies where interpersonal relationships afforded by one's environment in comparison with societies where interpersonal relationships are generally choice-based. We believe that further research into the effects of relational mobility will open up a door to a wide variety of investigations into the ways the reality of a given social context can regulate and influence the behavior and psychology of people living there.

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TABLE 1: Factor Loadings of Relational Mobility Scale by Country (Study 1)

	Culture				
	JAPAN (<i>n</i> =149)			US (<i>n</i> =152)	
	1	2	3	1	2
<i>Factor 1: Meeting new people</i>					
In general, people are able to get to know a lot of other people.	.044	.529	.406	-.277	.360
It is common for people to have a conversation with someone they have never met before.	.228	.573	.004	-.040	.754
In most circumstances, it is easy for people to make new acquaintances.	-.138	.528	.233	-.231	.565
It is strange for people to have a conversation with someone they do not know.*	.122	-.596	-.119	.233	-.572
<i>Factor 2: Choosing one's own relationships</i>					
For the most part, people are able to choose those who they interact with.	-.223	.023	.547	-.480	.318
For the most part, people are able to choose the groups and organizations they belong to.	-.251	.228	.595	-.568	.182
If people do not like their current groups or relationships, they will tend to leave that group or relationship for a new one.	-.402	.210	.543	-.523	.122
It is often the case that people cannot freely choose who they associate with.*	.552	.039	-.582	.616	-.223
<i>Factor 3: Being bound to undesirable groups* (all items reversed)</i>					
Even though they might rather leave, people often have no choice but to stay in groups they don't like.	.823	-.013	-.418	.836	-.137
Even if people are not satisfied with their current relationships, they often have no choice but to stay with them.	.588	-.010	-.299	.823	-.194
Even if one belongs to an inferior group, most people have no choice but to stay in that group.	.320	-.397	-.086	.627	-.104
Even if one is unhappy with group they belong to, they will usually stay with it anyway.	.402	-.059	-.158	.511	-.219
Variance accounted for by each factor:	1.96	1.50	1.82	3.42	1.69

*reversed item

TABLE 2: Relational Mobility and Generalized Trust Scales: Reliability, Means and Standard Deviations by Country (Study 1)

<i>Variable</i>	Culture				
	Japan <i>n</i> = 148		US <i>n</i> = 152		<i>t</i>
	α	<i>M</i> (<i>SD</i>)	α	<i>M</i> (<i>SD</i>)	
Relational Mobility Scale	.70	3.54 (.50)	.81	3.98 (.61)	6.64***
General Trust	.82	3.71 (.66)	.70	3.90 (.66)	2.44*

TABLE 3: Factor structure of the revised relational mobility scale (Study 2)

	Japan (<i>n</i> = 415)		US (<i>n</i> = 199)	
	1	2	1	2
<i>Meeting new people</i>				
It is common for these people to have a conversation with someone they have never met before	<u>.776</u>	-.080	<u>.794</u>	-.376
It is uncommon for these people to have a conversation with someone they have never met before*	<u>-.666</u>	.104	<u>-.779</u>	.296
They have many chances to get to know other people	<u>.731</u>	-.161	<u>.812</u>	-.547
There are few opportunities for these people to form new friendships*	<u>-.729</u>	.277	<u>-.736</u>	<u>.536</u>
It is easy for them to meet new people	<u>.671</u>	-.300	<u>.829</u>	-.525
<i>Choosing one's own interaction partners</i>				
They can choose who they interact with	.346	<u>-.545</u>	<u>.587</u>	<u>-.567</u>
These people are able to choose the groups and organizations they belong to	.326	<u>-.589</u>	<u>.543</u>	<u>-.657</u>
It is often the case that they cannot freely choose who they associate with*	-.157	<u>.680</u>	<u>-.662</u>	<u>.665</u>
If they did not like their current groups, they would leave for a better one	.143	<u>-.567</u>	.284	<u>-.722</u>
Even if these people were not satisfied with their current relationships, they would often have no choice but to stay with them*	-.142	<u>.747</u>	<u>-.480</u>	<u>.653</u>
Even if these people were not completely satisfied with the group they belonged to, they would usually stay with it anyway*	-.012	<u>.640</u>	-.287	<u>.686</u>
Even though they might rather leave, these people often have no choice but to stay in groups they do not like*	-.169	<u>.736</u>	<u>-.563</u>	<u>.807</u>
Variance explained by each factor:	2.88	3.16	4.91	4.36

TABLE 4: Revised Relational Mobility and General Trust Scales: Reliability, Means and Standard Deviations by Country (Study 2)

<i>Variable</i>	Country						
	Japan			US			<i>t</i>
	<i>N</i>	α	<i>M (SD)</i>	<i>N</i>	α	<i>M (SD)</i>	
Relational Mobility Scale (Revised)	415	.78	3.69(.60)	197	.89	4.42(.82)	1.40*
General Trust	310	.85	3.81(.81)	180	.86	4.08(.69)	1.86***

* $p < .05$ ** $p < .01$ *** $p < .0001$

APPENDIX: Relational mobility scale in English and Japanese in questionnaire format

<p>How much do each of the following statements accurately describe the people in the immediate society (your school, workplace, town, neighborhood, etc.) in which you live? Please indicate how true you feel each statement to be for the people around you by circling the appropriate number to the right of each statement.</p>	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1. They have many chances to get to know other people	1	2	3	4	5	6
2. It is common for these people to have a conversation with someone they have never met before	1	2	3	4	5	6
3. They can choose who they interact with.	1	2	3	4	5	6
4. There are few opportunities for these people to form new friendships	1	2	3	4	5	6
5. It is uncommon for these people to have a conversation with people they have never met before	1	2	3	4	5	6
6. If they did not like their current groups, they would leave for better ones	1	2	3	4	5	6
7. It is often the case that they cannot freely choose who they associate with	1	2	3	4	5	6
8. It is easy for them to meet new people.	1	2	3	4	5	6
9. Even if these people were not completely satisfied with the group they belonged to, they would usually stay with it anyway	1	2	3	4	5	6
10. These people are able to choose the groups and organizations they belong to	1	2	3	4	5	6
11. Even if these people were not satisfied with their current relationships, they would often have no choice but to stay with them	1	2	3	4	5	6
12. Even though they might rather leave, these people often have no choice but to stay in groups they don't like	1	2	3	4	5	6

*items 4, 5, 7, 9, 11, and 12 are reversed

あなたの身近な社会（学校、職場、住んでいる町、近隣など）に住む人々についてお尋ねします。次のそれぞれの文が、 あなたの周りの人々 にどれくらい当てはまるかを答えてください。（各質問についてもっとも適切な数字に○）	全くそう思わない	そう思わない	あまりそう思わない	少しそう思う	そう思う	とてもそう思う
1. 彼ら（あなたの周囲の人たち）には、人々と知り合いになる機会がたくさんある。	1	2	3	4	5	6
2. 彼らは、初対面の人と会話を交わすことがよくある。	1	2	3	4	5	6
3. 彼らは、ふだんどんな人たちと付き合うかを、自分で選ぶことができる。	1	2	3	4	5	6
4. 彼らには、新しい友人を見つける機会があまりない。	1	2	3	4	5	6
5. 彼らにとって見知らぬ人と会話することはそうあることではない。	1	2	3	4	5	6
6. もし現在所属している集団が気に入らなければ、彼らは新しい集団に移っていくだろう。	1	2	3	4	5	6
7. 彼らにとって、付き合う相手を自由に選べないことはよくある。	1	2	3	4	5	6
8. 彼らが新しい人たちと出会うのは簡単なことだ。	1	2	3	4	5	6
9. たとえ所属する集団に満足していなかったとしても、彼らはたいしてそこに居続けることになる。	1	2	3	4	5	6
10. 彼らはどの集団や組織に所属するかを自分で選ぶことができる。	1	2	3	4	5	6
11. たとえ現在の対人関係に満足していなくても、彼らはそこに留まり続けるしかないことがよくある。	1	2	3	4	5	6
12. たとえ現在所属する集団から離れたいと思っても、彼らはそこに留まらざるを得ないことがよくある。	1	2	3	4	5	6

* 4, 5, 7, 9, 11, 12 は逆転項目