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# Cross-Cultural Differences in Relationship- and Group-Based Trust

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*Two experiments explored differences in depersonalized trust (trust toward a relatively unknown target person) across cultures. Based on a recent theoretical framework that postulates predominantly different bases for group behaviors in Western cultures versus Eastern cultures, it was predicted that Americans would tend to trust people primarily based on whether they shared category memberships; however, trust for Japanese was expected to be based on the likelihood of sharing direct or indirect interpersonal links. Results supported these predictions. In both Study 1 (questionnaire study) and Study 2 (online money allocation game), Americans trusted ingroup members more than outgroup members; however, the existence of a potential indirect relationship link increased trust for outgroup members more for Japanese than for Americans. Implications for understanding group processes across cultures are discussed.*

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**Keywords:** *culture; trust; intergroup; interpersonal; identity*

**W**hen people are involved in situations where membership in a social group is salient, a number of cognitive, affective, and behavioral processes come into play. Group situations are often marked by processes consistent with social identity theory (e.g., Tajfel & Turner, 1986) and self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), including categorizing the self and others into ingroups and outgroups, engaging in intergroup comparison and competition, identifying with ingroups, and having a depersonalized representation of the self at the level of the collective (for comprehensive reviews, see Abrams & Hogg, 2001; Brewer & Brown, 1998; Hogg, 2001).

However, a recent theoretical framework proposed by Yuki (2003) suggests that the predominant characteristics of group cognition and behavior may differ across certain cultural contexts. According to this framework, processes consistent with social identity theory and self-categorization theory are most applicable to intergroup situations involving people from Western cultures. The typical characteristics of group cognition and behavior for East Asians, however, may be qualitatively different from those of Westerners. Although people in Western cultures tend to emphasize the categorical distinctions between ingroups and outgroups, East Asians may have a stronger tendency to think about groups as predominantly relationship-based (Yuki, 2003). In group

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contexts, East Asians tend to perceive themselves as a “node” embedded within a network of shared relationship connections (i.e., family members, friends, colleagues, acquaintances, friends of friends, etc.) rather than within strict, bounded groups per se. Within this framework, the ingroup for East Asians is cognitively represented as a relatively stable and structured network of relationships among group members.

Whereas social identity theory identifies intergroup comparison as a key source of ingroup identification and cooperation, Yuki’s (2003) framework proposes that East Asian collectivism is largely based on the promotion of cooperative behaviors and maintenance of relational harmony *within* ingroups. Indeed, there is evidence to suggest that ingroup bias based on categorical distinction may be in fact more pronounced in Western cultures than in Asian cultures (Bond & Hewstone, 1988; Bond, Hewstone, Wan, & Chiu, 1985; Buchan, Croson, & Johnson, 2003; Gudykunst, 1988; Heine & Lehman, 1997; Wetherell, 1982). It is important to note that this framework does not suggest that East Asians ignore the ingroup as a meaningful social unit, and research indeed suggests that they do impose boundaries between ingroups and outgroups (Gudykunst, 1988; Smith & Bond, 1999). Rather than thinking about groups as categories of depersonalized members, however, East Asians are especially concerned about maintaining a high level of knowledge about the complex relational structure within the ingroup, primarily because it is this knowledge that determines the expected behavior of individuals within the group (Aoki, 2001; Hwang, 1999; Nakane, 1970). Thus, East Asians tend not to depict their ingroups as depersonalized entities but as complex networks of interrelated individual members (Chang, Lee, & Koh, 1996; Hamaguchi, 1977; Ho, 1993; Hwang, 1999; U. Kim & Lee, 1994; King & Bond, 1985; Lebra, 1976; Munro, 1985). This type of group representation is consistent with research demonstrating that there are different bases for group entitativity and group attraction, with some groups emphasizing their categorical, depersonalized nature and others emphasizing the structured relational networks and interpersonal bonds among members (Hamilton, Sherman, & Lickel, 1998; Prentice, Miller, & Lightdale, 1994; Seeley, Gardner, Pennington, & Gabriel, 2003).

According to Yuki (2003), East Asian group members chronically perceive themselves to be personalized from and connected with those of other members, and they are aware of the exact location of the self within the group represented as a network. In fact, previous research has characterized East Asian group behavior as a set of strategies to maintain mutually beneficial relationships with fellow ingroup members, which eventually serve to maximize one’s own personal interest

(Hamaguchi, 1977; Yamagishi, Jin, & Miller, 1998). Overall, then, East Asian group behavior tends to place less emphasis on categorization, intergroup comparison, and depersonalization of the self and places more emphasis on maintaining harmony within groups, being sensitive to the needs and feelings of others, and being aware of the relationship structure within the group (for reviews, see Fiske, Kitayama, Markus, & Nisbett, 1998; Markus & Kitayama, 1991; Yuki, 2003).

Although the bases of group cognition and behavior may differ across cultures, these differences are relative rather than absolute; category memberships and relationships within ingroups are meaningful to both East Asians and Westerners. Indeed, research indicates that both category-based and network-based group processes can operate simultaneously in Western cultures (e.g., Hamilton et al., 1998; Hogg, 1993; Prentice et al., 1994) and also in East Asia (Karasawa, 1991; Yuki & Yokota, 2002). However, Yuki’s (2003) framework posits that people from Western cultures such as the United States have a stronger chronic tendency to emphasize categorical distinctions between ingroups and outgroups, whereas East Asians, such as Japanese, have a stronger chronic tendency to emphasize the structure of interrelationships within groups.

This idea of a relationship-focused group orientation for Japanese is consistent with research on cross-cultural differences in the construal of the self (Brewer & Gardner, 1996; Markus & Kitayama, 1991). The tendency to focus on the relational aspects of the self has been labeled the “interdependent self-construal” (Markus & Kitayama, 1991). Cognitively, the interdependent self-construal represents connections of the self with others via stable interpersonal relations, particularly with regard to others who are part of important relationships, as well as ingroup members from small, well-connected groups (Brewer & Gardner, 1996; Markus & Kitayama, 1991; Yuki, 2003). This idea is also akin to the concept of a “relational self,” as defined by Brewer and Gardner (1996), or the more interdependent social nature of women versus men in the West (Cross & Madson, 1997). This interdependent nature is reflected by the fact that Japanese, as exemplars of an interdependent society, show a tendency to relationship enhance but show fewer tendencies toward self- or group-enhancement than Westerners (Endo, Heine, & Lehman, 2000; Heine & Lehman, 1995, 1997; Sedikides, Gaertner, & Toguchi, 2003). Those with interdependent selves also show an increased tendency to conform to situational norms (H. Kim & Markus, 1999), to conform to the decisions of others (Iyengar & Lepper, 1999), and to mimic others’ overt behaviors (van Baaren, Maddux, Chartrand, de Bouter, & van Knippenberg, 2003).

## CONSEQUENCES FOR DEPERSONALIZED TRUST

Assuming that the predominant nature of Japanese and American group cognition and behavior is in fact different, this difference should manifest itself in situations where people must decide whether to trust others. Although the concept of trust has always been an integral aspect of research in social psychology, there has been a recent resurgence of interest in trust as a central psychological construct (Buchan, Croson, & Dawes, 2002; Foddy, Platow, & Yamagishi, 2003; Kramer, 1999; Yamagishi, Foddy, Makimura, Matsuda, & Platow, 2003). Of particular interest is the role of trust in contexts and institutions where participants must decide whether to rely on others with whom they have little or no personal knowledge or history of an interpersonal relationship (Cook, 2001; Foddy et al., 2003; Kramer, 1999; Ostrom, 1998; Tyler, 2001; Yamagishi et al., 2003; Yamagishi & Yamagishi, 1994). Such "depersonalized trust" (Brewer, 1981) is essential for the creation and maintenance of many forms of economic exchange, organizations, and social and political institutions.

For purposes of the current research, trust is defined as an expectation of beneficent treatment from others in uncertain or risky situations (Foddy et al., 2003). In general, the concept of trust reflects a belief that others will act in a way that will benefit (or not harm) oneself *before* one knows the outcome of other's behaviors (Dasgupta, 1988). Trust is typically called for in situations where another person has the potential to gain at one's expense but can choose *not* to do so (Yamagishi & Yamagishi, 1994).

Although it is generally difficult to establish trust in a person whom one does not know personally, Macy and Skvoretz (1998) state that the "earliest trust rule is based on social distance—trust neighbors, but not outsiders" (p. 651). There are, however, at least two possible types of unknown "neighbors." First, shared category membership becomes a basis of depersonalized trust (Brewer, 1981; Buchan et al., 2002; Macy & Skvoretz, 1998; Yamagishi & Kiyonari, 2000). As a consequence of shifting psychologically from the personal to the collective level of identity, the individual may be less likely to distinguish the interests of other ingroup members from those of oneself, leading to increasing trust toward fellow ingroup members. A second route involves sharing a network of interpersonal relations with others. Individuals may trust others if they know (or believe) that they are directly or indirectly connected to each other through mutual friendships or acquaintances (Coleman, 1990).

If, as Yuki's (2003) theoretical framework suggests, there is a cultural difference in the relative emphasis on categorical distinctions or interpersonal networks, it is likely that the predominant basis of depersonalized trust

may differ for people in the United States and Japan. If Americans' group behavior tends to be based on the categorical distinctions between ingroups and outgroups, then depersonalized trust should be highest toward others who share an ingroup membership; in addition, the presence or potential for cross-group relationships should matter less to Americans than the categorical distinction between ingroup and outgroup. By contrast, if Japanese group behavior tends to be driven more by the importance of relationship networks, then trust should be highest toward individuals who are presumed to share a direct or indirect network of relationships, regardless of group membership. In other words, Japanese should also show a high level of trust toward ingroup members, primarily because ingroup members are likely to share direct or indirect interpersonal links. However, if an unknown outgroup member shared an indirect interpersonal connection with participants (through a personal acquaintance), this cross-group relationship link should increase trust for an outgroup member. Such a cross-group relationship link may blur the psychological boundary between the ingroup and outgroup more for Japanese than for Americans. However, trust toward outgroup members with no cross-group relationships was predicted to be relatively low in either culture.

To test these predictions, we conducted two studies that compared the extent to which Americans and Japanese trusted three critical target persons, all of whom were strangers and identified only by group membership. The first unknown target person was an individual who was explicitly identified as an ingroup member. A second unknown target was an outgroup member, but this outgroup was identified as one where the participant had an acquaintance; in other words, the outgroup member was connected to participants by a potential (but not explicit) cross-group relationship. A third unknown target was an outgroup member who was defined as having no potential cross-group relationship connection.

Based on our theoretical framework, we predicted that trust would be highest toward the unknown targets who were ingroup members and lowest toward unknown outgroup members within both cultures, although we stipulate that this trust should occur for different reasons. For Americans, the level of trust for strangers should be based on the sharing of category membership, whereas trust for Japanese should be based on the likelihood of a direct or indirect interpersonal connection with such a person. The hypothesized cross-cultural difference in the basis of ingroup trust for strangers is tested by trust toward the outgroup target who had a potential cross-group relationship connection to participants. Specifically, we predicted that given the greater emphasis on relationships rather than categories in the

Japanese culture, the potential cross-group relationship would matter more to Japanese than to Americans, leading to a greater increase in trust for Japanese than Americans.

#### STUDY 1

Study 1 was an exploratory experiment designed as an initial investigation of our predictions that Americans would choose to trust primarily based on category memberships, whereas Japanese would be more likely to trust others based on the possibility of direct or indirect relationship links. Study 1 investigated these predictions across a variety of hypothetical scenarios that called for trust decisions to be made toward different unknown target persons. Participants completed a questionnaire packet including three different scenarios that involved a decision to trust an unknown target person based on a minimal amount of information. These three scenarios involved asking someone to watch bags in an airport, loaning someone money in a restaurant, and deciding to purchase concert tickets from someone over the internet. These circumstances require trust because in each situation there is uncertainty about whether targets will behave in a beneficial or harmful manner (e.g., targets may steal bags or not pay back money) and participants must decide if they can and should depend on them given a minimal amount of personalizing information. Multiple scenarios were included so we could investigate the general patterns of trust toward strangers based on group-membership information rather than trust specific to any one type of scenario.

#### *Method*

*Participants.* Two hundred and fifteen students of American nationality at Ohio State University (OSU) (135 women, 87 men) and 171 students of Japanese nationality at Hokkaido University and 28 students at Hokkaido University of Education (106 women, 93 men) participated in exchange for partial course credit. Participants at OSU were recruited from the introductory psychology subject pool and voluntarily signed up in return for partial course credit via the Psychology Department's online research participation Web site. Participants at Hokkaido University were students in a cross-cultural psychology class who volunteered to participate in exchange for partial course credit, whereas participants at Hokkaido University of Education were educational psychology students who participated on a voluntary basis.

*Procedure.* Participants completed the experiment in sessions of approximately 20 to 40 students per session. Participants arrived at a designated classroom and were given an experimental packet from the experimenter.

Participants were asked to sit down and complete the packet, following the instructions on each page. The questionnaire was constructed simultaneously in English and in Japanese; equivalence was checked by a back-translation from the Japanese version. Questionnaires were administered to the participants in their native language and were completed anonymously, except for information on participants' age, gender, and nationality. The instructions on the first page of the packet indicated that the experiment dealt with trust and that we were interested in determining to what extent participants would trust strangers in a variety of situations. Participants were told that they would be reading several different scenarios and that they would be asked to indicate the extent to which they would trust specific types of strangers in these situations. Participants were asked to read the instructions carefully, imagine themselves in each situation, and answer as honestly as possible.

Participants then turned to the first page, which contained one of the three scenarios. For example, in the "airport" scenario, participants read the following story:

You are on a summer trip. You are standing in the baggage claim area in the airport in a large city. You are waiting for your friend to pick you up; however, he is late. You have two large, heavy suitcases as well as your backpack.

Throughout the long flight, you were unable to go to the bathroom. You desperately need to go, now. You are surrounded by your fellow passengers, and there is one person whom you overheard talking in the plane. You are thinking about asking this person to watch your bags for you. Please imagine yourself in this situation and answer the following questions as accurately as possible.

For each scenario, participants were presented with one of four critical target persons to trust, all of whom were not known personally: an ingroup member, an outgroup member with a potential relationship connection, an outgroup member with no connection, or a person with no identifying information (baseline). Ingroups differed across scenarios, and participants were given only one target person per scenario (the target that participants received in each scenario was randomly determined). For the airport scenario, the ingroup was participants' university; for the loaning money scenario, the ingroup was participants' city of residence; for the internet scenario, the ingroup was participants' nation of residence. In the airport and loaning money scenarios, group membership was supposedly known based on participants overhearing a conversation as the target was talking. For the internet scenario, group membership was based on the nationality that the target person used to identify himself online.

The potential relationship connection was represented by unknown targets who were identified as being in an outgroup (i.e., different university, different city of

TABLE 1: Means for Absolute Levels of Trust, Study 1

	Target	Scenario			Overall
		Airport (N = 414)	Restaurant (N = 413)	Internet (N = 407)	
Americans	Ingroup	4.51	3.19	3.87	3.91
	Potential relationship	3.91	2.46	3.70	3.39
	Outgroup	3.77	2.55	3.20	3.16
	Baseline	3.33	2.58	3.17	3.01
Japanese	Ingroup	4.94	3.60	3.70	4.13
	Potential relationship	4.75	3.54	3.65	4.12
	Outgroup	4.02	3.59	3.47	3.65
	Baseline	3.33	3.43	3.13	3.33

residence, different nationality), but this outgroup was one in which the participant had an acquaintance (i.e., they knew someone attending that particular university, they knew someone from that city/nation, etc.). Note that the target person was not described as a direct acquaintance of the person that participants knew. Therefore, the relationship connection participants had with this target was merely a *possibility*. Given the vagueness of the relationship connection in this case, this provides a strong initial test of our underlying theoretical assumptions concerning the differential sensitivity to a cross-group relationship link for Japanese versus Americans.

The unknown outgroup target was one identified as belonging to a group where the participants did not know anyone. The baseline target was identified as someone whom the participant knew nothing about. This baseline target was included to examine possible default differences in trust across cultures and scenarios. Following each scenario, participants were asked the extent to which they would trust the selected target person on a bipolar scale, where 1 indicated *complete distrust*, 4 was *neutral*, and 7 indicated *complete trust*.

### Results

*Amount of trust per target.* Table 1 indicates the levels of trust for the four targets in each scenario and cultural sample. Our initial focus was to determine whether there were any differences in baseline levels of trust across scenarios and cultures. A comparison of the overall means of trust toward the baseline targets indicated that Japanese trusted these targets more than Americans,  $F(1, 288) = 4.21, p = .041, \eta^2 = .014$ . However, as can be seen from the levels of trust in each scenario, this overall difference in baseline trust was almost exclusively the result of trust levels toward the target in the restaurant scenario; baseline levels of trust across cultures were not significantly different in either the airport scenario,  $p > .97$ , or in the internet scenario,  $p > .89$ . Only in the restaurant scenario did baseline levels of trust differ across cultures, with Japanese trusting a complete stranger signifi-

cantly more than Americans in this particular setting,  $F(1, 106) = 10.14, p = .002, \eta^2 = .087$ . Thus, overall baseline levels of trust were similar in both cultural samples.<sup>1</sup>

Because we were interested in trust based on targets' personalizing cues (ingroup, potential relationship, outgroup) and not in scenario differences per se, we collapsed the results across all three scenarios to investigate differences as a function of target cues alone. Collapsing the data across all three scenarios left us with a 2 (culture)  $\times$  4 (target type) between-subjects ANOVA as our main analysis.<sup>2</sup> The results of this overall analysis revealed a significant main effect for culture,  $F(1, 1161) = 25.63, p < .001, \eta^2 = .022$ , indicating that Japanese ( $M = 3.79$ ) showed higher trust than Americans ( $M = 3.39$ ). The analysis also revealed a significant main effect for target type,  $F(3, 1161) = 19.05, p < .001, \eta^2 = .047$ , such that participants were least trusting of the baseline targets overall ( $M = 3.33$ ), were more trusting of the outgroup ( $M = 3.87$ ) and potential relationship targets ( $M = 4.31$ ), and were most trusting of the ingroup members ( $M = 4.69$ ). However, the Culture  $\times$  Target interaction did not reach statistical significance,  $F(3, 1161) = 1.65, p = .177$ .

Although the omnibus Culture  $\times$  Target interaction was not significant, the primary focus in this study was on comparisons with the potential relationship target. Specifically, we predicted that the presence of a cross-group relationship link would increase trust more for Japanese than Americans. Thus, we conducted several planned comparisons to determine the extent to which the existence of a potential relationship connection increased trust for Japanese compared to Americans. In all, we looked at nine individual comparisons: those among the ingroup, potential relationship, and outgroup targets within each cultural sample separately, as well as comparisons for each target type across cultures.<sup>3</sup>

Comparisons between the ingroup and outgroup targets revealed that Americans and Japanese trusted the ingroup targets significantly more than the outgroup targets,  $F(1, 338) = 20.04, p < .001, \eta^2 = .056$ ;  $F(1, 253) = 7.512, p = .007, \eta^2 = .029$ , respectively. For Americans,

however, trust was significantly higher for the ingroup targets compared to the potential relationship targets,  $F(1, 332) = 8.73, p = .003, \eta^2 = .026$ , but this comparison was not significant for Japanese,  $p > .94$ . On the other hand, Japanese were significantly more trusting toward the potential relationship targets than the outgroup targets,  $F(1, 250) = 6.48, p = .011, \eta^2 = .025$ , although this comparison was not significant for Americans,  $p = .18$ . Overall then, Americans trusted the ingroup members significantly more than either type of outgroup target, whereas Japanese did not show differences in trust toward ingroup targets and the potential relationship targets; however, Japanese trusted both of these targets more than the outgroup members. Thus, as predicted, the presence of a potential cross-group relationship increased trust more for Japanese than for Americans.

Finally, cross-cultural comparisons indicated that levels of ingroup trust did not differ between cultures,  $p > .22$ . However, compared to Americans, Japanese showed significantly more trust toward the potential relationship target,  $F(1, 282) = 15.03, p < .001, \eta^2 = .051$ , and toward the outgroup target,  $F(1, 292) = 8.27, p = .004, \eta^2 = .028$ . Thus, although trust toward the target with the potential cross-group relationship link was higher for Japanese than Americans, trust was also higher toward the outgroup member, suggesting that perhaps any sort of personalizing information seems to give Japanese a stronger reason to trust people than Americans.

### Discussion

In Study 1, we explored whether patterns of depersonalized trust for Japanese and Americans would be different across a variety of hypothetical situations. Based on our underlying theoretical assumptions, we predicted that Japanese would choose to trust strangers when there was a relatively high likelihood of direct or indirect relationship with the targets, whereas Americans would trust primarily on the basis of shared group membership. Although the pattern of results differed somewhat within individual scenarios, the overall results of our study revealed that Americans trusted the unknown ingroup targets significantly more than either of the two unknown outgroup targets, irrespective of whether they had a personal acquaintance in the outgroup. By contrast, trust for Japanese participants was significantly higher for the potential relationship target compared to the outgroup target; however, trust was not significantly different comparing the ingroup and potential relationship target for Japanese. Thus, as predicted, the presence of a potential cross-group relationship link (through an acquaintance) produced a stronger increase in trust toward strangers for Japanese than for Americans.

It is important to reiterate that in the hypothetical scenarios in Study 1, there was no guarantee that the potential relationship target was a direct or indirect acquaintance of the participant; therefore, for Japanese, even the *possibility* of a relationship connection with a stranger was enough to increase trust for an outgroup member so that it did not significantly differ from trust toward an ingroup member, an indication of the strength that relationship connections may have for Japanese in intergroup situations. This set of findings provides initial support for our hypothesis that Americans' depersonalized trust is based more strongly on a categorical differentiation between ingroup and outgroup, whereas Japanese depersonalized trust is based more on direct or indirect networks of relationships among individuals.

Study 1 left some issues unresolved, however. First, the effects in this study were obtained by collapsing across three scenarios, all of which differed somewhat in their overall patterns of trust; therefore, it was important to replicate this same overall pattern of results within a single paradigm in a subsequent study. Second, it was somewhat surprising that Japanese trusted an unknown outgroup member more than Americans; this particular effect was not predicted based on our theoretical model. Although this result may indicate that any type of personalizing information increases trust for Japanese, it was important to see if this effect would emerge in a different type of depersonalized trust paradigm.

Third, trust may not be especially meaningful unless there is a real, substantive risk if the target person does not behave as expected; in other words, trust decisions may be most diagnostic when individuals actually have something to lose and/or gain in a given situation. In Study 1, the risk to participants in each situation was only hypothetical, and participants' trust in each target had no real consequences. Therefore, one major goal for Study 2 was to create a situation in which participants' trust decisions had meaningful, consequential outcomes, where participants had something at stake based on their decisions of whether to trust others.

Finally, although we assumed that the results of Study 1 indicated that Japanese were basing trust for each target primarily on likelihood of relationship connections, whereas Americans were basing their trust decisions on group memberships and ingroup/outgroup boundaries, we collected no data to assess directly whether participants were indeed using different bases for trust decisions. Therefore, in Study 2, we collected data to explore the cognitive bases for depersonalized trust decisions and the extent to which these decisions were based on sharing group memberships versus perceived likelihood of relationship connections.

## STUDY 2

Study 2 involved an online, real-time money allocation game that was used to create an engrossing, meaningful situation involving consequential trust decisions. The paradigm was a modified form of the allocator/recipient game devised by Kiyonari and Yamagishi (1999). In this decision task, participants make online decisions about whether to accept a “sure-thing” payment of \$3 (United States) or ¥400 (Japan) from the experimenter or an unknown allocation from a stranger (who had ostensibly been given \$11 or ¥1300 to distribute as he or she wished). Because actual monetary payments were involved and participants were told that their payment at the end of the experiment depended on the outcomes of their decisions to trust others, this paradigm entailed risk-taking with real stakes and, hence, a compelling test of participants’ willingness to place faith in a stranger based on minimal information regarding another person’s social group memberships or potential relationship connections.

Using this basic paradigm, we tested the amount of trust toward each of three target persons whose personal identity was unknown, as in Study 1. Because one of the most salient ingroups for participants in both cultures was university affiliation, this ingroup/outgroup distinction was used in Study 2. One target was an ingroup target and was identified as a student in the same university as the participant. A second target, representing a potential relationship target, was identified as a student at a university where the participant had earlier indicated that he or she had an acquaintance. A third target, representing a basic outgroup target, was identified as a student at a university where the participant did not claim to know anyone. In reality, all targets were fictional and were used as part of the cover story to create a realistic setting for trust decisions. Based on the results from Study 1, we predicted that Americans would tend to trust the ingroup target more so than either outgroup target, with no difference between the two outgroup targets. Japanese, however, were predicted to trust the ingroup and the potential relationship target more so than the outgroup target, with no difference between the ingroup and the potential relationship target.

*Method*

*Participants.* Participants were 146 (53 men, 93 women) American students at OSU and 122 (67 men, 55 women) Japanese students at Hokkaido University. Participants at OSU were recruited from the introductory psychology subject pool and voluntarily signed up in return for partial course credit and a monetary payment. Participants were recruited via the Psychology Department’s online research participation program.

Participants at Hokkaido University were 1st-year students recruited from the subject pool by the Department of Behavioral Science; they volunteered to participate in exchange for a monetary reward.

To ensure the credibility of the experiment’s cover story, participants were initially asked about their acquaintanceships in other universities. Participants in the American sample were asked to indicate whether they had acquaintances at other universities within the Big Ten (the conference of universities that includes OSU) and to indicate the specific school(s) that the acquaintances were attending. In Japan, participants were presented with a list of 11 famous national and public universities in Japan and were asked to circle the ones where they had personal acquaintances.

*Main session.* Participants arrived at the laboratory and were seated in experimental cubicles at one of several IBM-compatible computers. The experimenters explained that the study was an online decision-making game in which the participants would be interacting with other participants in a real-time, money allocation situation. It was explained that participants would be paid for their participation in the experiment as well as receiving partial course credit (in Japan, payment only was promised). The experimenter then instructed participants to turn on their computer and left the room so that the participants could begin the experiment.

The instructions on the computer monitor began by asking participants to enter their gender, school year, and last four digits of their social security number (United States) or subject ID (Japan). The computer then paused for a few seconds and, as part of the cover story, the instructions indicated that the computer was connecting to an online network. In actuality, however, the computer did not connect to any network and was simply programmed to wait 20 to 40 s before continuing. The main instructions then began by reiterating the experimenter’s instructions, that is, that the experiment was concerned with judgment and decision making and that it was being conducted in conjunction with students from other universities. As part of the cover story, participants were told that some conditions involved making decisions with other OSU/Hokkaido University students, whereas other conditions involved decisions with students from other universities. Participants were then told that they would be making decisions online with another “participant” who was performing the experiment at the same time but in a different location. The decision was to consist of dividing a set amount of money (\$11 or ¥1300) between the two individuals. Participants were told that one person would be randomly assigned the role of the allocator (the person who decides how much to give to each person) and the other would be

assigned the role of the recipient. The allocator's task was ostensibly to decide how much of the money he or she would keep for himself or herself and how much to give to the other participant. There were no specific rules for the monetary division and the allocator was supposedly allowed to divide up the money however he or she chose. Participants were told that their final payment was to be based on the amount of money they received (or kept) during this decision-making task. The instructions indicated that each participant would only know one thing about the other—the university each was attending.

The computer then paused for several seconds and the instructions indicated that it was randomly being determined which person would play the role of allocator and which person would be the recipient. However, the computer always assigned participants to the role of the recipient, whereas the fictional partner was always assigned the role of allocator. The instructions explained that the recipient had two options in the game from which to choose: he or she had to decide between taking an exit option of a "sure thing" (receiving \$3/¥400 from the experimenter) or taking whatever money the allocator decided to give him or her. The instructions also indicated that this choice had to be made before the other partner's choice was disclosed. In reality, of course, the allocator never made a decision and one of the main dependent measures was whether the real participants chose to trust the allocator and take this unknown allocation of money or whether they took the sure thing. Again, psychological realism was enhanced because participants were reminded that their ultimate compensation for their participation in the experiment depended on the amount of money they obtained from their decision. Thus, the decision to accept the allocator's allotment involved giving up \$3/¥400 with the risk of winding up with less (or no) money allocation.<sup>4</sup>

The computer then paused for another 10 s while the instructions indicated that the participant's partner was now being chosen. The computer then randomly selected either an ingroup target, a potential relationship target, or an outgroup target. If the computer selected the ingroup target, the instructions indicated that the allocator was a student from OSU/Hokkaido University. If the potential relationship target was chosen, the computer indicated that the allocator was from another university but that our records indicated that this was a university at which the participant had an acquaintance. If the outgroup target was chosen, the computer said that the allocator was from another university and that our records indicated that the participant did not know anyone at that university.<sup>5</sup> Once the allocator target was chosen and identified, participants were instructed to make their choice; they could choose

between accepting the sure-thing payment of \$3/¥400 or taking whatever amount the allocator had given them. Following the decision trial, participants were asked a series of follow-up questions, measuring the degree to which they trusted the allocator as well as the amount of money they expected to have received if they chose the allocator. Finally, as a manipulation check to ensure participants were paying attention to the instructions, they were asked to indicate whether the previous allocator had been from OSU/Hokkaido University or from another university.

Following the completion of the first trial, the instructions indicated that there were to be two more decision trials. Participants were told that their final payment would be based on the decision made on one trial and that this critical trial would be randomly selected at the end of the experimental session. This was done to motivate participants to maximize their possible reward for each trial independently of the others. The choice paradigm was then repeated over two more trials. All participants performed exactly one trial for each different target, that is, once with the ingroup target, once with the potential relationship target, and once with the outgroup target (with order varied randomly across participants). Following each decision trial, participants were again asked to indicate amount of trust for the target, specific amount of expected money, and the manipulation check.

Following all three trials of the money allocation game, participants completed a number of posttest questions, assessing their identification with their ingroup as well as the likelihood that they may have either directly or indirectly known the allocators from each university. These questions were designed to more directly test our theoretical assumptions about the different nature of group representations for Americans and Japanese. After these questions, the computer then indicated that the payment would be randomly determined. However, the computer always chose the second decision trial as a basis for payment. Participants were paid the \$3/¥400 if they had chosen the sure-thing option on Trial 2, and they were paid \$4/¥600 if they had chosen to trust the allocator. Following payment, participants were probed for suspicions as to the cover story, debriefed as to the true nature of the experiment, and thanked for participating.

*Ingroup identification measures.* The first set of five questions on the posttest questionnaire measured participants' identification with their ingroup (e.g., "How strongly do you feel attachment to OSU/Hokkaido University?" "How strongly do you define yourself as an OSU/Hokkaido University student?" and "How close do you feel to other OSU/Hokkaido Uni-

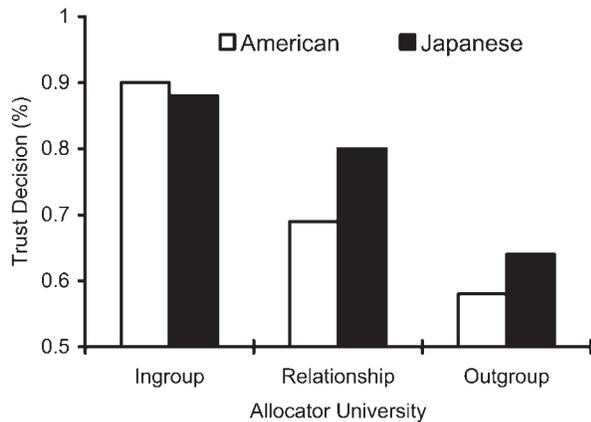


Figure 1 Yes/no trust decisions toward targets, Study 2.

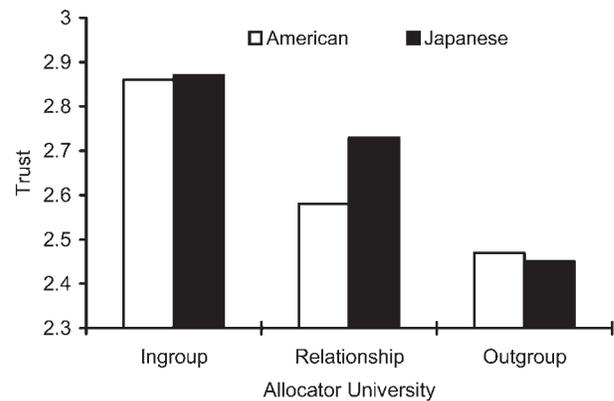


Figure 2 Amount of trust toward targets, Study 2.

versity students?”). Responses were indicated on 9-point unipolar scales.

*Measure of relationship likelihood.* The second set of questions measured the extent to which participants may have had relationships with each allocator. Participants in each sample were asked to indicate the likelihood that they either (a) personally knew the allocator on each of the three decision trials or (b) had an indirect relationship with the allocator for each trial, that is, they knew someone who knew the allocator. Participants indicated their responses on 9-point unipolar scales.

### Results

*Selection of participants.* Eighteen (10 Japanese, 8 American) participants were discarded from the subsequent analyses because they misidentified the target in at least one condition, indicating a lack of attention to the instructions. This left the data from 138 participants (49 men, 89 women) in the United States and 112 (61 men, 51 women) in Japan for formal analysis.

*Online judgments and decisions.* Initial analyses were carried out on participants' yes/no decisions as to whether to trust each of the three different allocators. A “yes” was indicated as a willingness to take the money given by the allocator (i.e., a decision to trust) and a “no” by the choice of the sure-thing option (see Figure 1).

The initial yes/no decisions were subjected to several successive nonparametric analyses to determine differences in trust between the three allocators. For the analyses on the repeated-measures, within-culture data, we used several nonparametric tests to determine whether significant differences in trust existed toward allocators within each sample. In the American sample, a Cochran's  $Q$  test indicated that participants' trust toward the three targets were significantly different,  $Q(2) =$

32.98,  $p < .001$ . McNemar tests on the comparisons for individual targets showed that participants trusted the ingroup target more than both the potential relationship target,  $\chi^2(138) = 18.22$ ,  $p < .001$ , and the outgroup target,  $\chi^2(138) = 27.84$ ,  $p < .001$ . However, the difference in trust between the potential relationship target and the outgroup target was not significant for Americans.

In the Japanese sample, participants also showed differential trust toward the three targets,  $Q(2) = 13.34$ ,  $p = .001$ . In addition, significant differences emerged in trust between the ingroup target and the outgroup target,  $\chi^2(112) = 8.50$ ,  $p = .004$ , and between the potential relationship target and the outgroup target,  $\chi^2(112) = 7.31$ ,  $p = .007$ . However, the difference in trust for the ingroup target and the potential relationship target was not significant. A cross-sample comparison using a chi-square analysis for the between-subjects data indicated that Japanese were significantly more trusting toward the potential relationship target than were Americans,  $\chi^2(250) = 4.26$ ,  $p = .039$ , but no cross-sample differences emerged between the ingroup and outgroup targets. Thus, Americans trusted the ingroup target more than either outgroup target, with no differences between the potential relationship target and the outgroup target, whereas Japanese trusted the ingroup member and potential relationship target more than the outgroup member, with no differences between the ingroup target and potential relationship target.

The degree to which participants trusted each allocator was then analyzed. A  $3 \times 2$ , mixed-factorial ANOVA was conducted on trust ratings, with allocator as a within-subjects variable and culture of participant as a between-subjects variable. As seen in Figure 2, the pattern was similar to the yes/no decision measure. The results of this overall analysis indicated a main effect for target type,  $F(2, 496) = 28.77$ ,  $p < .001$ ,  $\eta^2 = .104$ , such that the most

trust was shown toward the ingroup member and the least toward the outgroup member. However, this was qualified by a marginally significant interaction between target type and culture,  $F(2, 496) = 2.79, p = .063, \eta^2 = .011$ , indicating that the pattern of trust differed depending on participants' cultural background.

A series of planned comparisons was carried out to determine differences in trust toward individual targets.<sup>6</sup> These analyses indicated that Americans trusted the ingroup target significantly more than both the potential relationship target,  $F(1, 137) = 20.46, p < .001, \eta^2 = .130$ , and the outgroup target,  $F(1, 137) = 36.93, p < .001, \eta^2 = .212$ . However, Americans exhibited no significant differences in trust comparing the potential relationship target and the outgroup target,  $p > .13$ . Within the Japanese sample, no significant difference emerged comparing the ingroup target and the potential relationship target,  $p = .24$ . However, there were significant differences in trust between the ingroup target and the outgroup target,  $F(1, 111) = 21.72, p < .001, \eta^2 = .212$ , and between the potential relationship target and the outgroup target,  $F(1, 111) = 14.50, p < .001, \eta^2 = .116$ , in the Japanese sample. Overall, then, Americans trusted the ingroup member more than both the potential relationship target and the outgroup target, whereas Japanese showed no differences in trust toward the ingroup target and potential relationship target, although both were trusted more than the outgroup target. These results replicate those obtained in Study 1.

We also analyzed the amount of money participants expected to receive from each of the three allocators. Because of the different types and amounts of money given across cultures (an available pool of \$11 in America vs. ¥1300 in Japan), this dependent measure was converted from an absolute number into a percentage of the total possible money that could be received (e.g., expected money out of \$11 or out of ¥1300). Results of these analyses mirrored those of allocator trust. A  $3 \times 2$ , mixed-factorial ANOVA was conducted on these data, with allocator as a within-subjects variable and culture of participant as a between-subjects variable. The results of this overall analysis indicated a marginally significant interaction,  $F(2, 494) = 2.51, p = .083, \eta^2 = .010$ , indicating that the expected money from each allocator differed depending on participants' cultural background.

As with the trust analyses, planned comparison analyses indicated that Americans expected a larger percentage of the total possible money from the ingroup target ( $M = 42\%$ ) than the potential relationship target ( $M = 36\%$ ),  $F(1, 136) = 17.47, p < .001, \eta^2 = .116$ , and more money from the ingroup target than the outgroup target ( $M = 34\%$ ),  $F(1, 137) = 21.81, p < .001, \eta^2 = .138$ . However, no difference emerged comparing the potential relationship target and the outgroup target in the American

sample,  $p > .25$ . In the Japanese sample, expected money did not differ between the ingroup target ( $M = 39\%$ ) and the potential relationship target ( $M = 38\%$ ),  $p > .38$ . However, a difference in expected money did emerge between the ingroup target and the outgroup target ( $M = 34\%$ ),  $F(1, 111) = 12.31, p < .001, \eta^2 = .100$ , and between the potential relationship target and the outgroup target,  $F(1, 111) = 7.21, p = .008, \eta^2 = .061$ . These results were essentially identical to those on the trust measures, indicating that the presence of a potential cross-group relationship increased trust more for Japanese than for Americans.

*Ingroup identification and relationship likelihood.* A basic assumption behind this research is that Americans and Japanese tend to think about group identity in predominantly different ways and that it is these differences that are at least partly responsible for differences in depersonalized trust. We predicted that Americans' group behavior would be based on the importance of category membership, whereas Japanese group behavior would depend more on the degree to which they perceived that they were connected to others via direct or indirect relationships. Thus, we predicted that Americans' ingroup identification would be significantly correlated with the degree to which they decided to trust an unknown ingroup member versus other targets. On the other hand, trust decisions for Japanese should be more strongly related to the degree to which they were likely to share either direct or indirect relationship connections, and this degree of likelihood should be correlated with the extent to which they decided to trust different allocators.

The results largely supported our predictions. Overall, Americans ( $M = 6.90$ ) were more highly identified with their ingroup than were Japanese ( $M = 5.44$ ),  $F(1, 247) = 81.08, p < .001, \eta^2 = .247$ . However, Japanese were more likely to assume *indirect* relationship connections with all three allocators—ingroup:  $F(1, 248) = 25.62, p < .001, \eta^2 = .094$ ; potential relationship:  $F(1, 248) = 8.44, p = .004, \eta^2 = .033$ ; outgroup:  $F(1, 248) = 27.32, p < .001, \eta^2 = .099$ . However, no cross-cultural differences emerged in likelihood of *direct* relationships,  $ps > .11$  (for a presentation of means, see Table 2).

It is important to point out that if participants were accurate in their assessments of the likelihood of direct connections with each target, then Americans and Japanese did not differ in the number of *actual* relationships they had within any of the three types of groups. Thus, these data indicate that Japanese are simply more aware of the potential for indirect networks of relationships than are Americans. So although the potential relationships were the same for Americans and Japanese (because likelihood of direct connections did not differ), it was the awareness or accessibility of the potential indi-

TABLE 2: Mean Likelihood of Direct and Indirect Relationship Connections, Study 2

	Direct Connection			Indirect Connection		
	Ingroup	Potential Relationship	Outgroup	Ingroup	Potential Relationship	Outgroup
American participants	2.79	2.56	2.18	3.28	3.19	1.97
Japanese participants	2.69	2.33	1.85	4.53***	3.91**	2.98***

NOTE: Significant differences are indicated for comparisons across cultures and within individual targets.  
\*\* $p < .01$ . \*\*\* $p < .001$ .

TABLE 3: Correlations With Amount of Trust for Allocators, Study 2

Group ID	Direct Connection			Indirect Connection		
	Ingroup	Potential Relationship	Outgroup	Ingroup	Potential Relationship	Outgroup
American participants	.189*	.026	.070	.097	.116	.083
Japanese participants	.158†	.370**	.165†	.230**	.188*	.176†

† $p < .10$ . \* $p < .05$ . \*\* $p < .01$ .

rect relationships that was significantly higher for Japanese than for Americans rather than the actual number of relationships being larger. Thus, it seems that the perceptions of the possibilities of interconnections, not differences in actual number of relationships, that is at least partly responsible for our effects, which is consistent with our hypotheses.

In addition, and also consistent with our theoretical framework, trust was significantly correlated with ingroup identification for Americans; however, trust and ingroup identification was also marginally correlated for Japanese (see Table 3). On the other hand, trust tended to be significantly correlated with the likelihood of direct and indirect connections for Japanese, but not for Americans.

### Discussion

Study 2 used an experimental money allocation game to test whether depersonalized trust would be different across cultures in a situation involving monetary incentives and a realistic element of risk. Replicating the results from Study 1, we found that Americans trusted outgroup targets less than an ingroup target, irrespective of whether they had a personal acquaintance in the outgroup. On the contrary, Japanese trust was more strongly influenced by a potential interpersonal connection with an outgroup target; Japanese showed no differences in trust comparing the ingroup target and the potential relationship target, whereas both of these targets were trusted significantly more than the outgroup target with no potential relationship connection. Thus, as predicted, the presence of a potential cross-group rela-

tionship increased trust more for Japanese than for Americans.

Of importance, we also found direct evidence for our theoretical assumptions about the different bases for depersonalized trust across cultures. Americans' ingroup trust was significantly positively correlated with their ingroup identification, although there was also a marginal relationship between trust and ingroup identification for Japanese. In contrast, Japanese participants' trust also was related to their subjective estimation of potential direct and indirect connections with the three targets; such a relationship was not found for American participants. This set of findings provides evidence for our hypothesis that Americans' depersonalized trust is based more strongly on a categorical differentiation between ingroup and outgroup, whereas Japanese depersonalized trust is based more on the likelihood of relationship connections among individual persons.

However, it is worth noting that the correlation between Japanese trust and ingroup identity was similar to the correlation for Americans and did approach significance. In fact, the larger sample size of Americans in this study may have contributed to the fact that the correlation between ingroup identity and trust was significant for Americans, but only marginally significant for Japanese. In addition, the pattern of results across the main dependent variables indicated that Americans trusted the potential relationship target more than the outgroup target, although this comparison never reached statistical significance. Thus, it seems fair to conclude that both categorical distinctions, as well as the presence or possibility of cross-group relationships, are meaning-

ful to both Americans and Japanese. However, our overall results do indicate that there seems to be a stronger chronic tendency to focus on the shared category memberships in the United States, whereas the Japanese may be more chronically inclined to think in terms of interpersonal relationships.

#### GENERAL DISCUSSION

The results from two experiments, using both hypothetical scenarios (Study 1) as well as a money allocation game involving real risk and vulnerability (Study 2), supported our hypotheses that characteristics of group cognition and behavior may differ across cultures. Across both studies, Americans tended to trust strangers based on the categorical differentiation between those who share the same group memberships and those who do not. On the other hand, depersonalized trust for Japanese depended more on the likelihood that targets shared direct or indirect relationship links. In particular, the presence of a potential cross-group relationship had a stronger impact on outgroup trust for Japanese than for Americans across both studies.

This set of findings has a number of important implications. First, the present results provide support for Yuki's (2003) theoretical model of culturally specific group processes. The pattern of depersonalized trust that American participants showed (i.e., trust toward ingroup members and distrust toward outgroup members irrespective of potential relationship connections across groups) is consistent with the social identity model, where group behavior and cognition are based primarily on a depersonalized categorical differentiation between ingroup and outgroup. However, Yuki argues that Japanese tend to represent groups as stable and extended networks among individuals. The results from our Japanese samples are congruent with the relationship model of Japanese group behavior and cognition, with Japanese trusting those who most likely shared direct and indirect interpersonal relationships, as exemplified by the high levels of trust toward ingroup members, and toward outgroup members with potential relationship connections. Overall, then, our data offer support for this general theoretical framework of two different models of group cognition and behaviors depending on the cultural context.

Second, our results indicate that the two kinds of "depersonalized trust" revealed here, one based on the sharedness of category membership (Brewer, 1981) and the other based on indirect interpersonal connections (Coleman, 1990), may in fact result from two distinct psychological processes, one at the interpersonal level and the other at the category level. This is consistent with the recent argument that social identity and group cog-

nition in general are made up of both collective (or category level) processes on one hand and more relational processes on the other (Brewer & Gardner, 1996; Hamilton et al., 1998; Hogg, 1993; Prentice et al., 1994; Vignoles, Chryssochoou, & Breakwell, 2000). The present results further suggest that both relational and collective process may be at work in group contexts; thus, it is particularly important that future research distinguish between interpersonal and collective effects as well as determine what temporary and permanent contextual influences may lead to each type of process.

Our results also may have implications for the utility of different types of groups, specifically between *common-identity* versus *common-bond* groups (Prentice et al., 1994). A common-identity group is a group in which members are more attached to the group per se rather than to fellow group members. On the other hand, members in a common-bond group are attached to individual members of the group and their ingroup identification and evaluation of individual members are strongly correlated. The common-identity group may be most consistent with social identity theory's view of ingroups as undifferentiated and depersonalized entities and, according to Yuki (2003), this type of group may be especially applicable to intergroup contexts involving Americans. On the other hand, the common-bond group may be consistent with the present model of the Japanese view of ingroups as consisting of cognitively differentiated members and may be more applicable to contexts involving Japanese. Indeed, this idea is supported by recent evidence that groups that are based on a common identity may be especially attractive to Americans, whereas Koreans, another East Asian group, prefer to join common-bond type groups (Choi & Pickett, 2004). The present data provide further support that common-bond groups may in fact be a more typical type of group in the East, or that Easterners may be more comfortable in such groups, whereas common-identity groups may have more utility or more ubiquity in the West.

#### *Limitations and Future Directions*

It is important to emphasize that although our theoretical framework assumes that group cognition and behavior differ when comparing people from Western cultures and East Asian cultures, the present findings cannot yet be generalized to broadly include all people from Western cultures and all people from East Asian cultures. In Studies 1 and 2, samples included university students from only three universities, one in America and two in Japan. Thus, future research is needed to help determine the external validity of these results; for example, whether the findings are replicable across a wider sample of Japanese and Americans and whether people from other Western countries (i.e., Canadians, Europe-

ans) and other East Asian countries (i.e., Chinese, Koreans) also demonstrate the same effects as our current samples. A second caveat involves the fact that only a handful of types of ingroups and outgroups were used in the present research; thus, it will be important to try to generalize the present findings across a wider variety of groups. Last, the present research focused only on targets' potential for cross-group relationships. In the future, researchers should investigate the effect of direct cross-group relationships with outgroup members and how a stronger and more explicit connection may affect depersonalized trust within and across groups for both Westerners and East Asians.

Another important direction for future research concerns possible differences in trust when category and network information is shared between two people versus when such information is not mutually available to both parties. There is some evidence that there are cases in which such sharedness/unsharedness of category information is a crucial factor for the emergence of trust and cooperation. For instance, Foddy and colleagues (2003) found that ingroup members are trusted only when group membership information is mutually shared between ingroupers. In the present experiments, however, the category/relationship connection information was not completely shared by participants and targets. In Study 1, we did not mention that the hypothetical target person knew the participants' group memberships. In Study 2, although participants were told that their fictional partners knew about their own group membership, we did not mention that the fictional partners also knew about the participants' cross-group relationship connection. Future research should explicitly incorporate the sharedness/unsharedness factor of group membership/relationship connection to determine how decisions to trust others may in fact depend on such sharing of information.

A final, more speculative question concerns whether these culturally specific patterns of depersonalized trust would be considered *rational* or *adaptive* in their respective societies. There is an emerging perspective in cultural psychology in which culture is understood as an adaptive dynamic interaction between the macrostructure of society and individual level behavioral and cognitive tendencies (e.g., Yamagishi et al., 1998). Might American participants' tendency to trust unknown ingroup members over outgroup members, irrespective of the existence of potential interpersonal connections, be more adaptive in an individualist society such as the United States, and how would such strategies offer an advantage when trust decisions need to be made? On the other hand, is it possible that individual Japanese may function better in society when basing trust decisions on some sort of relationship connection to others rather

than via group memberships? The answers to such questions may have important implications for our understanding of how each society is organized and may provide important clues to the establishment of truly *social* psychological theory of trust.

#### NOTES

1. It is important to note, however, that the overall patterns of trust did differ in each of the three individual scenarios, perhaps reflecting differences in the importance of various ingroup/outgroup distinctions. In particular, group membership of strangers did not seem to have an impact on trust in the restaurant scenario for Japanese, perhaps suggesting that city of residence may not be an especially meaningful ingroup for Japanese or that trust is generally high in this situation.

2. Although individual participants contributed ratings to more than one scenario, varying by target condition, we decided to conduct a between-subjects analysis, primarily because Study 1 involved an incomplete Latin-squares design: There were four possible targets but only three scenarios. Thus, although participants received all three scenarios, they did not receive all four target choices, making a complete within-subjects analysis impossible. Also, because of the incomplete design of the study, participant differences were confounded with the particular scenario-target combinations they received, and collapsing across scenarios helped control for this. However, because the intercorrelations among trust ratings from the same respondents for the three targets were small— $r(213) = .064$ , between the ingroup and the relationship targets,  $r(210) = .11$ , between the relationship and the outgroup targets, and  $r(218) = .18$ , between the ingroup and outgroup targets—we felt it was justified to treat these as independent data points.

3. Because the overall interaction for trust and target type did not reach the conventional level of significance, a modified Bonferroni test was used to control for an inflated alpha level for the planned comparisons (Keppel, 1991). This reduced the critical alpha level for each individual comparison in Study 1 to  $p < .033$ .

4. It is important to note that the allocator supposedly only knew the university identity of the recipient; he or she was not supposed to be aware of the sure-thing option (Kiyonari & Yamagishi, 1999).

5. For both outgroup targets, the specific university membership of the allocator was not mentioned to avoid the effects of specific stereotypes unique to each university (Yamagishi, Foddy, Makimura, Matsuda, & Platow, 2003).

6. Because the overall interactions for trust and expected money did not reach the conventional level of significance, a modified Bonferroni test was used to control for an inflated alpha level for the planned comparisons (Keppel, 1991). This reduced the critical alpha level for each individual comparison in Study 2 to  $p < .033$ .

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