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Relational Models and Horizontal and Vertical Individualism/Collectivism:

A Cross-Cultural Comparison of Americans and Japanese

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Abstract

Various researchers (i.e., Singelis, Triandis, Bhawuk, & Gelfand, 1995; Triandis & Gelfand, 1998) have suggested that the cultural variables of horizontal and vertical individualism and collectivism correspond to Fiske's (1991, 1992) relational models of collectivism, authority ranking, equality matching, and market pricing. In this study, we tested this claim in a cross-cultural comparison between American and Japanese respondents' use of relational models in three different relationships. Results provide evidence that cultural differences are reflected in relational model use such that communal sharing was associated with a horizontal cultural orientation, authority ranking was associated with a vertical cultural orientation, equality matching was associated with horizontal individualism, and market pricing was associated with horizontal individualism and vertical collectivism. In addition, increased use of communal sharing was also associated with increased intimacy in respondents' relationships.

There are two recurring problems cross-cultural researchers have to confront in their research. First, much past research has focused on cultural differences using a single dimension, most often individualism-collectivism. Analyzing cultures along only one dimension, however, is problematic because cultures are far too complex to be accurately described by a single dimension. Second, culture does not exist independently from the individuals that constitute them. That is, culture is a psychological as well as an sociological phenomenon and descriptions that do not take both perspectives into consideration are necessarily limited in their validity.

The first problem has been addressed by researchers using additional dimensions to conceptualize cultural differences, such as the typology of horizontal and vertical individualism and collectivism proposed by Singelis and Triandis and their colleagues (Singelis, Triandis, Bhawuk, & Gelfand, 1995; Triandis, 1995; Triandis & Gelfand, 1998). Similarly, the second problem has been addressed by researchers using individual level conceptualizations of individualism and collectivism, such as the concepts of ideocentrism and allocentrism proposed by Triandis, Leung, Villareal, and Clack (1985).

To date, however, there is no research that has addressed both these problems simultaneously, presumably for lack of an adequate theoretical model. In this article, we test whether Fiske's (1991, 1992) relational model theory can be used to adequately conceptualize Singelis's and Triandis's cultural typology on the level of individual psychology. Specifically, we hypothesized that Fiske's communal sharing corresponds with horizontal collectivism, Fiske's authority ranking corresponds with vertical individualism, equality matching corresponds with horizontal individualism, and market pricing corresponds with vertical individualism.

Individualism and Collectivism

In cross-cultural research, the variable that has been most thoroughly studied is probably the individualistic/collectivistic dimension (Triandis, 1989). Individualistic cultures focus on independence and personal identity whereas collectivistic cultures focus on interdependence and group harmony (Hofstede, 1984; Triandis, 1995). Bravery, creativity, self-reliance, solitude, and frugality are valued in individualistic cultures, whereas reciprocity, obligation, duty security, tradition, dependence, harmony, obedience to authority, equilibrium, and proper action are valued in collectivistic cultures (Triandis, 1989).

The study of collectivism and individualism has been extraordinary fruitful because the two dimension have shown to have a strong impact on a wide range of behaviors in many cultures. For example, a study by Hui and Villareal (1989) explored the differences in psychological needs between people in individualistic and collectivistic cultures. People in individualistic cultures value self-reliance, and autonomy, whereas people in collectivistic cultures value interdependence, affiliation, succorance, abasement and nurturance. In conflict situations, Ting-Toomey and Kurogi (1998) found that people in individualistic cultures used direct and face-threatening strategies whereas people in collectivistic cultures used indirect and face-saving strategies. The two cultures differ in perception on conflict management styles as well. In individualistic cultures, individual goals are addressed and self-face is enhanced, whereas in collectivistic cultures group needs are addressed and mutual and in-group face are enhanced (Ting-Toomey & Kurogi, 1998).

Even though individualism and collectivism are often discussed as dichotomous categories, most researchers would argue that individualism and collectivism are polar

opposites along one continuum (Triandis, 1989). That is, cultures vary from one another based on the degree of their individualism or collectivism rather than belonging into one of two categories. For example, according to Hofstede (1984), the United States, a typical individualistic culture had the highest Country Individualism Index Values (CIIV) (91) among 39 countries, whereas CIIV of Venezuela was the lowest (12). Japan scored 46, which was a little less than the mean (51). Overall, Western countries tend to be more individualistic, whereas South American and Asian countries tend to be more collectivistic.

Vertical and Horizontal Individualism and Collectivism

The individualism/collectivism dimension alone, however, is insufficient in explaining differences between cultures. For example, Triandis (1995) observed that there were great differences among highly individualistic cultures as well as among highly collectivist cultures. For example, American culture is very different from Swedish culture, even though both are very individualistic, and similarly, Korean culture is very different from the culture of an Israeli kibbutzim, even though both are very collectivist. Based on such observations, Triandis and his colleagues (Singelis, Triandis, Bhawuk, & Gelfand, 1995; Triandis, 1995; Triandis & Gelfand, 1998) have argued that there is at least one other important dimension that differentiates cultures: the linear ordering of relationships as being either vertical or horizontal. Cultures that emphasize vertical relationships differentiate persons from one another according to rank and create a strict social hierarchy. Cultures that emphasize horizontal relationships, in contrast, stress the equality of all persons and create a flat social hierarchy. Although Triandis and his colleagues were the first to use the horizontal and vertical labels to describe this dimension, other scholars (e.g.,

Hofstede, 1984; Schwartz, 1994, 1999) have discussed very similar dimensions in their work as well.

For example, the concept of vertical and horizontal relationships corresponds to power-distance, one of the important cultural dimension identified in Hofstede's (1984) seminal work on cross-cultural differences. Like individualism and collectivism, power distance is conceptualized to exist along a continuum from low to high. According to Hofstede's Power Distance Index (PDI), Asian and South American countries such as the Philippines (94), Mexico (81), and Venezuela (81) are highest on power distance, whereas European countries such as Austria (11), Israel (13) and Denmark (18) are lowest. Both the United States (40) and Japan (54) are in the mid-range among the 39 countries investigated by Hofstede (1984).

Dimensions similar to individualism and collectivism, and vertical and horizontal relationships also have been identified by Schwartz (1994, 1999). Among the seven cultural value types identified by Schwartz, the autonomy - conservatism dimension is roughly equivalent to individualism and collectivism and Schwartz's hierarchy - egalitarian dimension is conceptually similar to horizontal and vertical relationships. Hierarchical cultures value social power, authority, humility and wealth, whereas egalitarian cultures value equality, social justice, freedom, responsibility and honesty (Schwartz, 1999).

Combining the two dimensions of individualism and collectivism with vertical and horizontal relationship orientations allows researchers to distinguish between four different cultural types (Singelis et al, 1995; Triandis, 1995; Triandis & Gelfand, 1998). They are horizontal individualism (HI), vertical individualism (VI), horizontal collectivism (HC), and vertical collectivism (VC). According to Singelis et al. (1995) and Triandis & Gelfand

(1998), in HI cultures people want to be unique and independent but they are not particularly interested in being distinguished from others and do not seek high status. People in VI cultures want to be distinguished from others and seek high status through competition. In HC cultures equality, interdependence and sociability are important and people see themselves as part of an in-group. People in VC cultures also see themselves as members of an in-group, however, they see differences among group members, and status inequality is expected. Of course, these cultural types not only describe different cultures but sub-cultures as well. In their study of collectivism within the United States, for example, Singelis et al. (1995) found that vertical collectivism is seen more often among Asian Americans than European Americans.

Instantiations of Culture on the Level of the Individual

Although culture is often defined as shared norms and values, culture also exists on an individual level. Culture, in other words, is also the product of the attitudes, beliefs, and behaviors of individuals within a group of persons of similar values and norms. Consequently, one can also describe culture from a psychological perspective, which requires one to investigate how cultural norms and values are represented in the cognition of individuals. Triandis, Leung, Villareal, and Clack (1985) did precisely that for the cultural dimensions of individualism and collectivism. They argued that the psychology and behaviors of individuals are never completely uniform within any given culture and it is therefore useful to identify individualism and collectivism on the individual level as idiocentrism and allocentrism, respectively. Likewise, Markus and Kitayama (1991) developed the notion of independent and interdependent construals of the self to describe cultural differences on the level of the individual.

Idiocentrism is the expression of individualist values and norms on an individual level. It is concerned with values such as a comfortable life, competition, pleasure and social recognition. According to Triandis et al. (1985), it is related to need for achievement, alienation, and anomie. Allocentrism is the expression of collectivist values on an individual level. It is concerned with values such as cooperation, equality, and honesty. It is strongly related to perceptions of social support received, and quality and satisfaction with the support.

Markus and Kitayama's (1991) interdependent self is similar to allocentrism, whereas the independent self is similar to idiocentrism. Their notion of self is that of a cognitive construct that others cannot know directly and that is beyond "a physical or ecological sense of self [...], and of the continuous flow of thoughts and feelings" (p. 225). Markus and Kitayama argued that although some aspects of self are universal, most important aspects of the self are determined by culture. According to their definitions, the interdependent self is concerned with connection to others and social relationship, whereas the independent self is concerned with separation from others, autonomy, and independence. Marcus and Kitayama (1991) argued that individuals in Western cultures hold more independent construals of the self and individuals in Asian and Hispanic cultures hold more interdependent construals of the self.

One advantage of conceptualizing cultural variables as existing on an individual level is that it explains differences that exist not only between individuals of different cultures, but also offers an explanation for variations among individuals of the same culture. For example, research found evidence for the coexistence of ideocentrism and allocentrism in India (Sinha & Tripathi, 1994), China (Ho & Chiu, 1994), and Japan

(Yamaguchi, 1994). Triandis (1995) also suggested that Japan and China, both collectivistic countries, are showing increasing evidence of idiocentric traits among their members, especially among the younger generations. Similarly, people in Scandinavian countries, which are usually described as individualistic, recognize the importance of in-groups, which is indicative of the allocentrism of the individuals.

Relational Models and Cultural Differences

Allocentrism and idiocentrism, proposed by Triandis et al. (1985), are the individual level instantiations of the cultural dimension of individualism and collectivism. However, as we have argued above, individualism and collectivism alone are incomplete descriptors of culture and their explanatory power is dramatically increased by adding the cultural level dimension of vertical versus horizontal relationship orientation. Therefore, to arrive at a better conceptualization of how culture is instantiated on the level of the individual, idiocentrism and allocentrism have to be augmented by individual level representations of horizontal and vertical relationship orientations as well.

One way to achieve this augmentation would be to design a new measure for horizontal and vertical relationship orientation on the individual level. Although ostensibly relatively simple, this method has the great disadvantage that even though strong theoretical reasons suggest their existence, there are so far no data to empirically support this theoretical claim and the psychometric properties of such newly designed measures are obviously unknown. A better strategy, therefore, would be to identify an existing theory that conceptualizes and measures horizontal and vertical relationships, much like Triandis et al.'s (1985) and Markus and Kitayama's (1991) individual level measurements of individualism and collectivism. Fortunately, precisely such a theory exists with Fiske's

(1991, 1992) relational model theory, which not only has concepts similar to horizontal and vertical relationship orientations on the individual level, but concepts similar to allocentrism and idiocentrism as well (Singelis et al., 1995).

Relational Model Theory

Fiske (1991, 1992) argued that people interact with one another to construct and to participate in relationships that are based on one or more of only four fundamental relational models. He further claimed that the impact of these basic models is: pervasive, that is, governing all domains and aspects of social relationships; exhaustive, meaning no other fundamental types of relating exist; and generative, meaning that all relationships are constructed using the four basic relational models he proposed. The four relational models defined by Fiske are communal sharing (CS), authority ranking (AR), equality matching (EM) and market pricing (MP). These four models are types of relating rather than relationship types. That is, persons in actual and ongoing interpersonal relationships can and usually do relate to others in ways consistent with all four relational models within the context of the same relationship. In some relationship domains an ongoing relationship might be characterized by communal sharing, whereas in other relationship domains the partners employ a hierarchy ranking and equality matching. An example would be a couple that pools its income in one checking account (CS), where one partner takes an instructor role in gardening and tells the other what to do (AR), and where both partners take turns cleaning dishes (EM).

The model of CS is similar to Mills and Clark's (1982) description of communal relationships, where there are no differences between the individuals within the relationship. That is, relating according to this model is based on the perception that the

partners are equivalent and undifferentiated. The focus is on shared attributes and commonalities in values, beliefs, and goals. Within CS, no distinct individual identities exist, rather the groups to which individuals belong are differentiated. CS is often based on perceptions of common bonds, such as blood relationships. From the perspective of CS, other persons either belong to the in-group or to the out-group, but no further distinctions are made among group members. Generally, when applying CS to evaluate people, members of one's in-group are evaluated as being superior and more valuable than members of the out-group.

The AR model of relating is one where persons are differentiated by rank. Using AR to place persons in relations to one another, identity is equivalent to rank. That is, differences between individuals arise from their hierarchical positions in respect to one another. Persons of equivalent rank are not differentiated and people higher up in the hierarchy are evaluated as superior. Each rank brings with it its own set of rights and responsibilities compared to other ranks, and these rights and responsibilities form the basis for expectations and evaluations of one's own and others' behaviors.

The EM model of relating is one of equality among persons. Therefore, persons using EM are motivated to maintain that equitable balance. Unlike in CS, where members of the same group belong to be the same social entity, EM recognizes individuals as distinct social entities that have the exact same rights and responsibilities. When using the EM models, interactions and exchanges are balanced in a direct one-for-one reciprocity, such as turn taking, tit-for-tat retaliation, or egalitarian justice. Imbalances in social exchanges are noted and expected to be resolved, because they violate the bases for EM.

The MP model of relating is one where interactions and social exchanges are much

like economic transactions in a market economy. Relating according to the MP model is characterized by proportionality and equity. To achieve this, different aspects of relationships are reduced to a single currency or metric. As a consequence, existing imbalances in certain aspects of a relationship can be balanced by reverse imbalances in other aspects of the same relationship. That is, unlike EM relationships, in MP relationships a deficit in affection can be balanced with a surplus in interpersonal control, for example. At the same time, existing imbalances within a relationship can be expressed by a singular value, the cost/benefit ratio. This ratio allows individuals to determine the relative social value of relational partners compared to one another and the comparative relational outcome for each partner in the relationship. Thus, the MP relational model is roughly equivalent to formulations of social exchange theory (Roloff, 1981, 1987; Rusbult, & Buunk, 1993) and to Mills and Clark's (1982) descriptions of exchange relationships.

Relational Model Theory and Culture

Singelis et al. (1995) and Triandis and Gelfand (1998) have argued that Fiske's (1991, 1992) four relational models conceptually matched the cultural dimensions underlying horizontal and vertical individualism/collectivism. Specifically, Singelis et al. (1995) and Triandis (1995) have argued that communal sharing corresponds to collectivism, that market pricing corresponds to individualism, that equality matching corresponds to a horizontal relationship orientation, and that authority ranking corresponds to vertical relationship orientation. In other words, they argued that horizontal collectivism is a combination of CS and EM; that vertical collectivism is a combination of CS and AR; that horizontal individualism is a combination of MP and EM; and that vertical

individualism is a combination of MP and AR. Fiske (1992) also noted the relationship between culture and the use of relational models when he noted that CS is the most important aspect in interpersonal relationships in Japan, EM is more prevalent in interpersonal relationships in Africa, Asia and the Caribbean, and AR and MP are more important and pervasive in Western cultures.

Because neither Singelis et al. (1995) nor Triandis (1995) have tested their claims empirically, the first hypothesis in our study then is the prediction that the cultural variables of individualism & collectivism and vertical and horizontal relationship orientations correlate with individuals' use of Fiske's (1991, 1992) relational models in their interpersonal relationships. Specifically,

H1a: Individualism correlates positively with Market Pricing.

H1b: Collectivism correlates positively with Communal Sharing.

H1c: A vertical relationship orientation correlates positively with Authority Ranking.

H1d: A horizontal relationship orientation correlates positively with Equality Matching.

The second hypothesis tested in this study is that the four cultural types identified by Singelis et al. (1995) are expressed on the individual level as a tendency to use the two relational models that correspond to their cultural orientation more than the other two relational models. In regard to the four cultural types, Japan is usually characterized as a VC cultures, whereas the United States is usually characterized as a HI culture. The characterization of the U.S. as a HI culture, however, is controversial. Some researchers (Singelis et al., 1995; Triandis, 1995) have argued that American culture should be identified as VI, at least in comparison with other individualistic cultures, such as the Scandinavian countries. Classifying U.S. culture as VI outright, however, seems to be

overemphasizing the impact of the economic system in the United States on its culture. It is our contention that only in its tolerance for economic inequality is American society vertically oriented, in all other respects there is hardly a culture that puts greater emphasis on equality than the North American. Thus, the specific predictions for this study in regard to relational models and cultures are:

H2a: Americans are horizontal individualistic.

H2b: American individuals are more likely to use equality matching and market pricing in their interpersonal relationships than communal sharing and authority ranking.

H2c: Japanese are vertical collectivistic.

H2d: Japanese individuals are more likely to use communal sharing and authority ranking in their interpersonal relationships than market pricing and equality matching.

Just like complex relationships usually are made up of more than one relational model (Fiske, 1992), cultures seldom fall into only one of the four cultural patterns (Triandis, 1995). That is, even within cultures, not all relationships follow the exact same pattern in regard to individualism & collectivism and horizontal and vertical relationship orientations. For example, based on Hofstede's (1984) scores of individualism/collectivism and power distance measures, Triandis (1995) suggested that Japan is 20% HI, 5% VI, 25% HC and 50% VC, whereas the United States is 40% HI, 30% VI, 20% HC and 10% VC. By advancing this argument, Triandis acknowledged that despite our tendencies to think of cultures as monolithic in regard to their basic dimensions, cultures are in reality much more complex. This leads to the third hypothesis in this study, the prediction that American and Japanese respondents differ in the extent to which they

utilize the Fiske's four relational models in their interpersonal relationships based on the relative importance of Triandis' four cultural patterns for their respective cultures.

Specifically,

H3a: In their interpersonal relationships, Americans respondents use MP model most often, followed by EM, AR and CS.

H3b: In their interpersonal relationships, Japanese respondents use CS model most often, followed by EM, AR and MP.

The final question pursued in this study is that of the relationship between relational model use and intimacy. Past research has strongly suggested that intimacy might be a decisive factor in determining the use of communal sharing types of behaviors versus the use of social exchange types of behaviors. Specifically, research by Roloff (1981, 1987) and by Mills and Clark (1982) suggest that more intimate relationships are characterized by a greater use of behaviors associated with communal sharing and that less intimate relationships more often are characterized by behaviors associated with market pricing. Although these theories are rather unambiguous and their predictions are straight forward, it is important to note that they both were developed within the context of U.S. culture. Consequently, they do not speak to the relationship between intimacy and relational model use in other cultures. There are reasons to believe, however, that intimacy has similar influences on relational model use regardless of culture. The final hypothesis tested in this study is therefore that intimacy correlates positively with CS use and negatively with MP use regardless of culture or relationship type.

Specifically,

H4a: Intimacy correlates positively with CS use in relationships of both American and Japanese participants.

H4b: Intimacy correlates negatively with MP use in relationships of both American and Japanese participants.

Method

Participants

A total of 370 American and Japanese nationals associated with a large Midwestern university participated in this study. American participants were recruited from several Speech Communication classes offered at the university. Instructors announced the survey in class, and extra credits were given to the students who participated. The 320 participants included 123 males (38.4%) and 197 females (61.6%). The average age was 21.13 (range: 16–59) and 317 (99.1%) of them were undergraduate students. There was little ethnic diversity among the American sample, with 262 Caucasians (82.4%), 31 Asians, 12 African Americans, 4 Hispanics, and 1 Pacific-Islander participating. The 50 Japanese participants include 15 males (30%) and 35 females (70%); 24 participants were graduate students (48%), 14 were undergraduate students (24%), and 11 were students of English as a Second Language (ESL), academic staff, or otherwise working for the university. Their average age was 29.9 (range: 19-48) and they have been staying in the United States for an average of 4.2 years (range: 1 month to 20.3 years).

Procedure

Procedures differed slightly for American and Japanese participants. American participants were recruited during their normal class time and participated in exchange for extra credit in their respective courses. Student who agreed to participate were invited to

come to a laboratory and to complete a questionnaire. Because there are almost no Japanese undergraduate students taking speech communication courses at this particular university, Japanese participants were identified using personal contacts of the researchers and student listings and contacted by e-mail, telephone, or handouts distributed in ESL classes. Those who agreed to participate were invited to a laboratory, where 17 participants completed the questionnaire. For 33 participants who could not come to the laboratory, the questionnaires were either mailed or handed directly to them, to be filled out at home and mailed back to the researchers.

Instruments

The questionnaire consisted of three parts. Part 1 included an instrument measuring participants' use of Fiske's (1991, 1992) relational models in three different types of interpersonal relationships: intimate partner (i.e., mother or dating partner), close friend, and public relationships (i.e., classmate or acquaintance). These relationships were chosen to operationalize different levels of relationship intimacy. Mothers and dating partners represented the most intimate relationships, close friend an intermediate level of intimacy, and classmate and acquaintance represented the lowest levels of intimacy. To assure that participants reported on the same relationship within relationship types, they were instructed to think about one specific person in each relationship. As a manipulation check, participants were asked to rate items measuring intimacy and satisfaction that the participants had with each person.

The instrument (Haslam & Fiske, 1999) measuring relational models consisted of 32 questions operationalizing the four relational models in eight relationship domains: exchange, distribution and use, work, relating, decision making, influence, identity, and

relationship. All questions were Likert-type items using seven point scales ranging from strongly disagree to strongly agree. Relational model endorsement was analyzed by computing the mean score of each relational model on all eight dimensions. Reliability coefficients of these scales were at the lower range of acceptable scores, with alpha ranging from .54 to .85. Part 2 of the questionnaire contained measures unrelated to this study.

Part 3 of the questionnaire contained a measure of horizontal and vertical dimensions of individualism and collectivism developed by Singelis et al. (1995). For each of the four cultural types, Japanese participants completed the full instrument with eight items for each cultural type, whereas American participants whose unrelated measures were longer used an abridged version (three items for each cultural type). Reliabilities for Japanese and Americans were computed for each cultural dimension. Because not all items of the scales for vertical and horizontal individualism for Japanese correlated with one another highly, one item for VI, and two items for HI were eliminated from the scale and not used in subsequent analyses. Reliability coefficients alpha for the scales ranged from .56 to .79. Finally, participants answered some demographic questions.

The questionnaire used in this study was originally written in English, but the Japanese participants completed a translated version of the questionnaire. In keeping with established standards, a bilingual translator not otherwise involved in the research conducted a back-translation and ambiguous questions were translated again until correspondence was achieved.

Results

A total of four hypotheses and their sub-hypotheses were tested in this study. To test H1 and H4, correlational and linear regression analyses were employed. H2 and H3 were tested using ANOVA.

Correlations Between Cultural Dimensions and Relational Models

Hypothesis 1 predicted correlations between the cultural dimensions underlying Singelis et al.'s (1995) measure of horizontal and vertical individualism and collectivism and Fiske's (1992) relational models. Specifically, it was predicted that individualism is positively correlated to market pricing, that collectivism is positively correlated to communal sharing, that a horizontal relationship orientation is positively correlated to equality matching and that a vertical relationship orientation is positively correlated to authority ranking.

Our initial inclination was to test this hypothesis by computing the underlying dimensions of Singelis et al.'s (1995) typology through an exploratory factor analysis of participants' score on the four scales of the measure. Even though we used a wide variety of extraction and rotation techniques, we were unable to find a satisfactory solution that clearly identified the two underlying factors. Consequently, we conducted regression analyses using participants' scores on the four scales measuring cultural types as predictor variables of participants' use of the four relational models in participants' three relationships (see Table 1).

Table 1. Correlations between Cultural Types and Relational Models for Three Relationship Types for the Combined Sample of Americans and Japanese.

Relational Models	Cultural Types			
	Horz. Collectivism	Horz. Individualism	Vert. Collectivism	Vert. Individualism
CS	.29***	.26***		
Mother/Partner	.25***	.18**		
Close Friend	.27***	.26***		
Acquaintance	.19**	.27***		
AR			.17**	.13*
Mother/Partner		-.14*	.14*	.14*
Close Friend			.13*	
Acquaintance		.13*	.15*	.15*
EM		.27***		
Mother/Partner	.26***	.32***		
Close Friend		.26***		
Acquaintance		.22***	.14*	
MP		.23***	.13*	
Mother/Partner		.35***		
Close Friend		.18**		.17**
Acquaintance		.25***	.16*	

Note. *** = $p < .001$; ** = $p < .01$; * = $p < .05$.

H1a stated that MP is positively correlated with individualism and was partially supported by the data, which showed a positive correlation of horizontal individualism with MP, although vertical collectivism also correlated with MP in participants' relationship with acquaintances. H1b stated that collectivism is positively correlated with CS and was also partially supported by the data, which showed positive correlations

between horizontal collectivism and CS, although horizontal individualism also correlated with CS, indicating that CS might be better predicted by a person's horizontal relationship orientation than by collectivism. H1c predicted a positive correlations between AR and vertical relationship orientation and was fully supported by the data that showed correlations between vertical individualism and vertical collectivism and AR. H1d predicted a positive correlation between EM and a horizontal relationship orientation and was partially supported by the data, which showed a positive correlation between horizontal individualism and EM for all relationships, but for horizontal collectivism and EM only for participants' relationships with mothers and dating partners.

Overall, the results show that, with the exception of AR that seemed to be clearly correlated to vertical relationship orientation, neither horizontal relationship orientation nor the individualism-collectivism dimension related to a single relational model as suggested by Singelis et al. (1995) and Triandis and Gelfand (1998). In other words, the two cultural dimensions do not exactly match the four relational models, even though the dimensions and Fiske's relational models are at least partially compatible as predicted.

Hypothesis 2a and 2c predicted that Americans were horizontal individualistic and that Japanese were vertical collectivistic, respectively. In other words, it was predicted that American participants would score highest on the HI compared to their scores for the other three cultural types, whereas Japanese would score higher on VC than on the other cultural types. To test these hypotheses and the implicit hypothesis that Americans and Japanese score differently on these cultural dimensions, we conducted a 2(cultures) by 4(types) repeated measure MANOVA. A statistically significant multivariate effect for type ($F [3,358] = 86.09, p < .001, \eta^2 = .42$) and the culture by type interaction ($F [3,358] = 16.50, p$

< .001, $\eta^2 = .12$) allowed us to continue with the analysis that also revealed a statistically significant main effect for culture ($F [1, 360] = 59.63, p < .001, \eta^2 = .09$). These scores are presented for Americans and Japanese in Table 2.

Table 2: Means and Standard Deviations of the Cultural Types for Americans and Japanese

	Cultural Types			
	HC	VC	HI	VI
Americans	5.9(.05) _{ab}	3.8(.08) _{acd}	5.9(.05) _{ce}	4.8(.07) _{bde}
Japanese	5.2(.13) _{abc}	3.6(.21) _{ade}	4.1(.14) _{bd}	4.3(.20) _{ce}

Note. Means in a row with the same subscript are different at $p < .05$ (two tailed). The differences between Americans and Japanese are also significant at $p < .05$, except for VC.

As predicted, Americans scored highest in horizontal individualism, but that they would score equally high on horizontal collectivism was not predicted, which weakens the support of the data for H2a. Even more surprising was the finding that Japanese participants scored lowest on vertical collectivism, which is the exact opposite of the prediction. Instead, they scored highest on horizontal collectivism. Thus, H2c was not supported by the data.

Hypothesis 2b and 2d predicted that in their interpersonal relationships, because of their HI culture, American individuals are more likely to use EM and MP than CS and AR, whereas Japanese individuals, because of their VC culture, are more likely to use CS and AR than MP and EM. To be meaningful, a comparison between the means of different scales requires that the values of the scales are roughly equivalent, that is, that the scales use the same metric and anchors. This requirement is problematic in our case, because of

the differences in social desirability of endorsing CS or AR relational models, for example, that leads to much higher scores on CS than on AR in all relationships, without that necessarily meaning that participants use CS much more in all of their relationships. To make the comparisons meaningful, we standardized the raw scores to z-scores. To compare scores between cultures, another transformation was necessary because Japanese participants in our sample were less likely to use extreme scores than American participants. Consequently, the range of the z-scores for Japanese was considerably more restricted than that of the Americans. Following a procedure recommended by Leung (1989), we transformed the scores by subtracting a participant's score for a relational model from the participant's mean of the other three scores and then standardized this transformed score into z-scores.

To test for differences among these scores, we conducted a 2 (cultures) by 4 (relational models) repeated measure MANOVA. A statistically significant multivariate effect for relational model ($F [3,1104] = 229.30, p < .001, \eta^2 = .38$) and the culture by relational model interaction ($F [3,1104] = 7.66, p < .001, \eta^2 = .02$) allowed us to continue with the analysis that also revealed a statistically significant main effect for culture ($F [3, 366] = 12.19, p < .001, \eta^2 = .91$). Table 3 shows the standardized transformed mean scores of each relational model used by Japanese and Americans for each of the three different interpersonal relationships.

Table 3: Standardized Means and Standard Deviations for the four Relational Models in Three Relationships for Americans and Japanese.

	Relational Models
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	<i>CS</i>	<i>AR</i>	<i>EM</i>	<i>MP</i>
<u>Americans</u>				
All Relationships	1.15* (.05)	-1.40* (.05)	0.75* (.03)	-0.50* (0.4)
Dating Partner	1.39 _A (1.23)	-1.26** _B (1.15)	0.56** (0.67)	-0.68** _C (0.87)
Close Friend	1.24 _A (1.14)	-1.59 (1.08)	1.01 (0.78)	-0.67** _{CD} (1.03)
Acquaintance	0.78** _a (1.22)	-1.34 _B (1.07)	0.77** _a (0.79)	-0.20* _D (0.92)
<u>Japanese</u>				
All Relationships	0.72* _a (.13)	-0.98* (.13)	0.97* _a (.08)	-0.71* (11)
Mother	1.22 _A (0.84)	0.18** _b (0.84)	0.01** _b (1.80)	-1.41** (0.66)
Close Friend	1.03 _{Ac} (0.87)	-1.55 _C (0.98)	1.40 _{Bc} (0.80)	-0.89** (0.92)
Classmate	-0.08** _d (0.96)	-1.61 _C (0.91)	1.52** _B (0.93)	0.17* _d (1.14)

Note. Means in the same row with the same subscript are NOT different at $p < .01$.; means in the same column with the same subscript are NOT different at $p < .01$ within a culture; ** signify a difference of means between cultures at $p < .01$, * = $p < .05$.

Results show little variation between different relationship types in use of relational models for Americans. They consistently ranked CS as most important and EM as second most important for all three interpersonal relationships, followed by MP and by AR, which was least important for Americans in all three relationships. Thus, H2b, which predicted that Americans would use EM and MP most frequently in their interpersonal relationships was only partially supported. That prediction, however, was based on the assumption that Americans would identify culturally as HI, which was not the case in our study as they identified their culture as equally HI and HC (see H1). Consequently, these results actually support the logic underlying the prediction that links Singelis et al.'s cultural typology with

Fiske's relational models, because in terms of the cultural types, HC corresponds to the relational models predominantly used by the Americans, CS and EM.

Across all three interpersonal relationships, Japanese participants used EM and CS most frequently and MP and AR least frequently. That is, contrary to H2d, which predicted CS and AR as the most frequently used relational models. But as it was the case for the American participants, given that these Japanese identified their culture as HC, the observed use of relational models actually support the theoretical prediction that cultural types and relational models are correlated in the predicted ways. What makes these results for Japanese participants more complex is that for Japanese the preferred relational models changed for each of the three different relationship types. In their relationships with their mothers, Japanese did as predicted, using CS and AR most frequently, which is consistent with the prediction of H2d. In their relationships with friends, however, they used EM and CS most frequently, and in their relationships with classmates, they used EM and MP most frequently. Or expressed in cultural types, they shifted from CV with their mother to a HC with their friends to HI with their classmates.

H3b's prediction that Japanese respondents used CS model most often, followed by EM, AR and MP was supported only for their relationships with their mothers. H3a's prediction that Americans used MP most often followed by EM, AR and CS was not supported for any of the three relationships. Therefore, neither H3a nor H3b were supported. Both Japanese and Americans used CS and EM more than MP and AR, and the proportions of these four relational models use did not differ very much between the two groups of participants. But again, the predictions were based on the assumption that Americans would be classified as HI and Japanese as VC. In our sample, that was not the

case as Americans self-identified as HI and HC, and Japanese self-identified as HC.

Consequently, the results support the logic of the original prediction linking cultural types and relational models, because the observed relational model use is consistent with what would have been predicted for HC cultures.

H4a predicted that intimacy correlated positively with CS in relationships of both Americans and Japanese, whereas H4b predicted that intimacy correlated negatively with MP use in relationships of both Americans and Japanese. Correlation coefficients between intimacy level and use of four relational models were computed (see Table 4). For both Japanese and Americans the use of CS increased as intimacy level increased in all three relationships. Thus, H4a was supported by the data. The predicted negative correlation between intimacy and MP was observed only for Americans in their relationships with close friends, and even here the association was small. Thus, H4b was not supported by the data. Other interesting correlations between intimacy and relational models that were observed include a positive correlation between intimacy and EM, but only for participants' closest relationships, and between intimacy and AR for participants' relationships with acquaintances. Apparently, for these relationships intimacy and power distance go hand in hand.

Table 4: Correlation Coefficients Between Intimacy Level and the Four Relational Models

	Relational Model			
	CS	EM	AR	MP
Intimate Partner				
Americans	.63**	.28**	-.10	.02
Japanese	.45**	.46**	.08	-.28
Close Friend				
Americans	.62**	.10	.03	-.15*
Japanese	.42**	.25	-.02	-.05
Acquaintance				
Americans	.68**	.13	.23*	-.03
Japanese	.54**	-.04	.36*	.02

Note: * $p < .05$; ** $p < .01$ (two-tailed)

Discussion

The main purpose of this study was to investigate the relationship between Singelis' et al.'s (1995) cultural typology and Fiske's (1991, 1992) relational models. As the results show, Fiske's relational models are indeed related to Singelis et al.'s cultural typology, although not in the perfect one to one correspondence suggested by Singelis et al. and Triandis (1995). Only AR correlated as predicted with both vertical cultural types, whereas CS seemed to be stronger correlated with a horizontal relationship orientation and not with collectivism as predicted. EM correlated only with HI and not as predicted also with HC, and MP also correlated only with HI and not also with VI as was predicted, although the predicted patterns were observed for at least some of the relationships tested. It has to be

seen whether we failed to find exactly the predicted patterns because the relationship between cultural types and relational models is not as theorized or because there was something unique about our measure of cultural types, which in our sample did not create factor loadings along their underlying theoretical dimensions and did not produce the cultural classification we expected. These problems notwithstanding, the two measures of cultural types and relational models correlated enough in predicted ways to indicate to us that cultural types might very well be expressed in relational models in individuals' psychology.

Additional evidence for this notion comes from our observation that the cultural types both Americans and Japanese identified for themselves predicted their use of relational models as suggested by theory. Americans who identified their culture as HC overwhelmingly used CS and EM in all three of their interpersonal relationships. Similarly, Japanese who identified their culture also as HC used CS and EM in their relationships with close friends, although their use of relational models changed depending on the type of relationship they reported on. Thus, it appeared that in our sample at least, Japanese participants reported greater variations of how they perceive relationships of different types, whereas the American participants seemed to perceive of all their relationships similarly. Clearly, a further investigation of this interesting pattern is desirable to see whether it can be replicated with other samples.

In summery then, we believe that that the research presented here provides strong evidence suggesting that fundamental cultural dimensions have corresponding dimensions in individuals' cognition. Specifically, individualism and collectivism are represented by the relational models of communal sharing and market pricing, respectively, and horizontal

and vertical relationship orientations are represented by authority ranking and equality matching. How individuals represent their relationships in cognition, however, is not solely determined by culture. Equally important are interpersonal dimensions such as intimacy. As our results have shown, greater intimacy leads participants of both American and Japanese culture to use more communal sharing in their relationships, a finding that has been suggested before (i.e., Roloff, 1981, 1987; and Mills & Clark, 1982) but not tested in a cross-cultural context. New is the finding that intimacy in close personal relationships is also associated with greater use of equality matching, whereas in less close relationships, use of authority ranking is associated with greater intimacy. These findings could be interpreted to mean that in their close relationships, equality is a requirement for experiencing real intimacy, whereas in less close relationships, intimacy is contingent of persons going beyond egalitarian rules of politeness, which involves acknowledging social differences.

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