Horizontal and Vertical Dimensions of Individualism and Collectivism: A Theoretical and Measurement Refinement

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In developing a new scale, this article makes theoretical and measurement distinctions between vertical and horizontal individualism and collectivism. Vertical collectivism includes perceiving the self as a part (or an aspect) of a collective and accepting inequalities within the collective. Horizontal collectivism includes perceiving the self as a part of the collective, but seeing all members of the collective as the same; thus equality is stressed. Vertical individualism includes the conception of an autonomous individual and acceptance of inequality. Horizontal individualism includes the conception of an autonomous individual and emphasis on equality. Measurement of these constructs is preferable theoretically and empirically (better internal consistency) to either of the more general constructs of individualism and collectivism or the constituent elements of these constructs, such as self-reliance, hedonism, family integrity, and so

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on. The usefulness of these theoretical distinctions is demonstrated and their implications are discussed.

The constructs of individualism and collectivism are of great interest to a wide range of researchers (Kagitcibasi & Berry, 1989). The interest can be traced to several factors:

1. The constructs link most of psychology, which was developed in the largely individualistic West, to the largest concentrations of the population of the world, which are found in predominantly collectivist Asia. No less than 35% of humanity lives in just two countries: China and India. The West is a shrinking 28% of humanity.
2. Many U.S. minorities, such as Hispanics (Marin & Triandis, 1985) and Asians (Triandis et al., 1986), tend to be collectivist.
3. Modern, industrial-urban, fast-changing cultures tend to be individualistic, whereas traditional, agricultural-rural, static cultures tend to be collectivist.
4. The upper classes in all cultures where status differentiation is present, as well as the extremely impoverished segments of a population (e.g., the Ik, in Turnbull, 1972; Brazilian poor mothers, in Scheper-Hughes, 1985) tend to be individualist, whereas the lower and middle classes tend to be collectivist.
5. Numerous social phenomena, such as different forms of interpersonal relationships in industry, different patterns of health statistics, forms of political system, and so on have been hypothesized (Triandis, 1995) to have links with these constructs.

MEASUREMENT CONCERNS

With such a high interest in the constructs comes a demand for their measurement. Unfortunately, the measurement has not been easy. Measurements at the cultural level (Chinese Culture Connection, 1987; Hofstede, 1980; Hofstede & Bond, 1984; Triandis et al., 1986, 1993) and the individual level (Hui, 1984, 1988; Triandis, Bontempo, Villareal, Asai, & Lucca 1988; Triandis, Leung, Villareal, & Clack, 1985; Triandis, McCusker, & Hui, 1990) were only partially successful. The most important limitation, especially for measurements at the individual level, has been low reliabilities.

Obviously, measuring aspects of culture requires obtaining a great deal of information from each respondent. Yet the users of

the individualism and collectivism constructs often ask for the simplest (shortest) way to measure these constructs. Unfortunately, the constructs are too broad for easy measurement. The broader the construct the lower the fidelity (Cronbach, 1990). In collectivism research, when the in-group was narrow (e.g., the country) as in Schmitz's (1992) study of patriotism, the alpha was high, $r = .95$. Similarly, when the focus was on the measurement of only an aspect of the constructs (e.g., the interdependent or independent self)—as in the work of Singelis (1994), Kato and Markus (1993), and Gudykunst, Matsumoto, Ting-Toomey, Nishida, and Karimi (1994)—as many as 40 items measured each construct, with alphas about .70 and sometimes larger than .80. But when the topic was broad (e.g., included many in-groups) and the number of items corresponding to each aspect necessarily small, the alphas rarely exceeded .70.

Cronbach (1990, pp. 208-210) discusses the "bandwidth versus fidelity dilemma." Bandwidth refers to the amount of information. It is a linear function of the number of different questions asked. Fidelity refers to the accuracy of the information, that is, the consistency of the answers obtained. Bandwidth is inversely related to fidelity. Cronbach and Gleser (1965) have concluded that when questions are of equal importance, obtaining rough answers to most or all of them is more profitable than precisely measuring just one or two aspects of the constructs. In short, several scores with relatively low alphas will give more valid information (covering the whole bandwidth) than fewer scores with high alphas. This is especially the case when a large number of people are assessed, because errors of measurement tend to average over subjects, and the inaccurate scores of any one subject have little significance for the research (Cronbach, 1990, p. 209). The difficulty with individualism and collectivism is that because they are broad constructs (e.g., large bandwidth), high alphas have been difficult to obtain.

Another problem is that when the instrument is generated in one culture (e.g., Triandis et al., 1988, from the United States), the factors that are extracted from a factor analysis may not emerge as clearly in other cultures. Thus the very general constructs (i.e., collectivism, individualism) and the very specific factors (e.g., self-reliance with competition, obtained by Triandis et al., 1988) do not provide the optimal levels of measurement. An intermediate level is required.

CONCEPTUALIZATION

A review of the literature on individualism and collectivism (Triandis, 1995) identified such an intermediate level of the constructs. First, four "defining" and more than 60 culture-specific attributes of individualism and collectivism were identified. The constructs are polythetic as in zoology, where a phylum (e.g., birds) is defined by one or two attributes (e.g., feathers, wings) and numerous attributes define hundreds of species of that category. For cultures, individualism versus collectivism is the broadest division, with numerous "species" of each, defined by culture-specific attributes. This is not to say that any culture is purely one or the other, nor does it imply that members of a culture are automatons blindly and uniformly representing and reproducing the culture. Unlike birds, human beings cannot be classified by a basically static and unambiguously measurable feature, such as shape of the nose. Rather, the defining attributes of cultures are best thought of as fluctuating pressures or tendencies, which may or may not be manifest in a particular individual or context. Nevertheless, the attributes enumerated below are useful in describing and predicting differences in social behavior among cultures. Over a wide variety of studies, these attributes have accounted for significant portions of variance (see Triandis, 1995). Although individuals can never be defined by a set of polar opposites (people are always gray—never black or white), we offer the distinctions below as a description of broad cultural pressures that result in a number of predictable tendencies in behavior.

The defining attributes of individualism and collectivism suggested in the Triandis (1995) monograph were as follows:

1. Collectivists define themselves as parts or aspects of a group; individualists focus on self-concepts that are autonomous from groups. Thus the contrast between interdependent and independent selves (Markus & Kitayama, 1991) is one of the defining attributes.
2. Collectivists have personal goals that overlap with the goals of their in-groups, and if there is a discrepancy between the two sets of goals, they consider it obvious that the group goals should have priority over their personal goals. Individualists have personal goals that may or may not overlap with the goals of their in-groups, and if there is a discrepancy between the two sets of goals, they consider it

obvious that their personal goals should have priority over the group goals (Schwartz, 1990).
3. Among collectivists, social behavior is best predicted from norms and perceived duties and obligations (Bontempo & Rivero, 1992; Miller, 1994). Among individualists, social behavior is best predicted from attitudes and other such internal processes as well as contracts made by the individual.
4. Among collectivists, relationships are of the greatest importance, and even if the costs of these relationships exceed the benefits, individuals tend to stay with the relationship. Among individualists, when the costs exceed the benefits, the relationship is often dropped (Kim, Triandis, Kagitcibasi, & Yoon, 1994).

Two examples of the 60 or so culture-specific attributes that define different kinds of individualism and collectivism are mentioned here:

1. Some individualists (e.g., Americans) link self-reliance with competition; others do not.
2. Some collectivists (e.g., the Japanese) emphasize in-group harmony very much and others not at all. For example, East Asians avoid confrontation and would rather tell a lie than cause anyone to lose face. On the other hand, in an Israeli kibbutz, intensive discussions that may result in people losing face are common.

In addition to describing the attributes of the constructs, the Triandis (1995) review of the literature highlighted that it is important to make the distinction between vertical and horizontal individualism and collectivism. Horizontal collectivism (H-C) is a cultural pattern in which the individual sees the self as an aspect of an in-group. That is, the self is merged with the members of the in-group, all of whom are extremely similar to each other. In this pattern, the self is interdependent and the same as the self of others. Equality is the essence of this pattern.

Vertical collectivism (V-C) is a cultural pattern in which the individual sees the self as an aspect of an in-group, but the members of the in-group are different from each other, some having more status than others. The self is interdependent and different from the self of others. Inequality is accepted in this pattern, and people do not see each other as the same. Serving and sacrificing for the in-group is an important aspect of this pattern.

Horizontal individualism (H-I) is a cultural pattern where an autonomous self is postulated, but the individual is more or less equal in status with others. The self is independent and the same as the self of others. Vertical individualism (V-I) is a cultural pattern in which an autonomous self is postulated, but individuals see each other as different, and inequality is expected. The self is independent and different from the self of others. Competition is an important aspect of this pattern. For example, in a factor analysis of items relevant to the individualism-collectivism constructs, with American-generated items and American students, the most important factor (accounting for most of the variance) was called self-reliance with competition (Triandis et al., 1988).

From such considerations, Triandis (1995) suggested that the United States and France provide examples of V-I; Sweden and Australia, examples of H-I; India and traditional Greece, examples of V-C; the Israeli kibbutz and many monastic orders, examples of H-C.

CULTURAL PATTERNS

Fiske (1990, 1992) has identified four patterns of social relationship related to the universal need to distribute resources in a society. In *communal sharing*, if one belongs to the group, one is entitled to share in the resources of the group, according to need. In *authority ranking*, the resources are shared according to rank. Rank has its privileges. The higher the rank the higher the share. In *equality matching*, resources are shared equally. One person, one vote; one person, one lot. In *market pricing*, resources are shared according to the contribution of each member. The more a member contributes, the more the member receives. Thus the equity principle (Berkowitz & Walster, 1976) is used.

The four cultural patterns identified by Fiske match the four types of patterns that emerge from the vertical-horizontal, individualism-collectivism typology. H-C includes communal sharing and equality matching; V-C, communal sharing and authority ranking; H-I, market pricing and equality matching; V-I, market pricing and authority ranking.

Rokeach (1973) identified four types of political systems that reflected the relative importance of two values: equality and free-

dom. Communism was the pattern where equality was high and freedom low; fascism, the pattern where both equality and freedom were low; liberal democracy, the pattern where freedom was high and equality low; social democracy, the pattern where both equality and freedom were high. It is probable that Rokeach's typology links with the present typology only for the case of extreme emphases on equality. On the basis of this judgment, we summarize the attributes of six cultural patterns in Table 1.

Thus extreme H-C is the pattern of theoretical communism, whereas moderate H-C is the pattern found in the Israeli kibbutz. Extreme V-C is the case of Nazi Germany, whereas moderate V-C can be found in most traditional villages. In India, for example, the village elders have a very strong hand in village government. Monastic orders that emphasize hierarchical rankings of authority, theocracies, and cults with strong leadership would fall also somewhere near this pattern.

H-I is the pattern found in Australia and Sweden (Daun, 1991). For example, Feather (1992) identified a tendency among Australians to bring down "tall poppies." They want to bring down those who have high status. Finally, the V-I pattern is found in the West, for example, the United States and France.

As stated previously, cultures are not pure; we assume that individuals exhibit each of these patterns at different times or in different situations. Recognizing that context has a strong effect on which orientation is tapped, we propose that cultures differ in the emphasis and prevalence of the various orientations. For example, one culture may include individuals who use, across different situations, V-I 60% of the time, H-I 20% of the time, V-C 15% of the time, and H-C 5% of the time, whereas the profile of another culture might be V-I 40%, H-I 40%, V-C 10%, and H-C 10%. Both cultures may be called individualistic, but it would be more accurate to call the first culture V-I. Japan is probably more V-C than H-C, because of the importance of knowing the relative status of the speakers to use the language correctly. However, individualistic elements, especially in the area of attitudes, increased between the 1950s and the 1990s (Hayashi, 1992; Iwao, 1990), so that the current cultural pattern may be V-C 40%, H-C 20%, V-I 25%, H-I 15%. Obviously, we need to measure these tendencies to be able to identify their relative importance in each society.

TABLE 1

Characteristics of Vertical and Horizontal Individualism and Collectivism

	Vertical		*Horizontal*	
	Collectivism	*Individualism*	*Collectivism*	*Individualism*
Self	Interdependent Different from others	Independent Different from others	Interdependent Same as others	Independent Same as others
Fiske orientation	Communal sharing Authority ranking	Market pricing Authority ranking	Communal sharing Equality matching	Market pricing Equality matching
Rokeach values	Low equality Low freedom	Low equality High freedom	High equality Low freedom	High equality High freedom
Political system	Communalism (e.g., rural village in India)	Market democracy (e.g., United States, France)	Communal living (e.g., Israeli kibbutz)	Democratic socialism (e.g., Sweden, British Labor Party)

THESIS AND SUMMARY

The main thesis of this article is that measuring V-C, V-I, H-C, and H-I is more desirable than measuring either the more abstract constructs of individualism and collectivism, or the constituent elements of the constructs. The most abstract constructs are too broad, so that the alphas will never reach satisfactory levels. The more concrete constructs have other problems.

One problem with the more specific scales is that different subjects have different conceptions about them. For example, self-reliance can mean "so that I can do my own thing" or "so that I will not be a burden on my in-group." Clearly, with two such different ways of thinking about self-reliance, it is difficult to obtain high alphas. Or consider items like these:

> Old parents should live at home with their children until they die.
>
> Children should live at home with their parents until they get married.

These items can be conceived as statements about social policy or as statements about individual attitudes. Obviously, the answers will be different if subjects see them in two different ways. Also, the alphas will be low if a subject uses one meaning in the early part of the questionnaire and the other meaning later.

If subjects see them as personal statements, noise is further introduced by the fact that some parents are charming and welcome in the homes of their children, whereas other parents are impossible; also, some children are wonderful to have around, and other children are menaces. Thus, although respondents may answer other related items consistently, their personal circumstances may introduce inconsistencies. In effect, the more narrow the statement and the corresponding construct, the more possibility that factors unrelated to the construct can influence responses. At the same time, we argued above that assessing too broad a construct also introduces unreliability. For these reasons, it would seem that the optimal measurement may well be at the vertical-horizontal, individualism-collectivism level. Data that we present below support this point.

The issue of the number of items needed to get good alphas is also important. Of course, the more items the higher the alpha—with 40 items per construct, alphas of .80+ are attainable. But,

researchers often want to measure individualism and collectivism in relation to other variables, which may require more than 100 items. So many items may overburden the subjects. We need instruments that are both relatively short *and* reliable. In this article, we attempted to provide such items.

Triandis, Chan, Bhawuk, Iwao, and Sinha (in press) presented data from three studies. In Study 1, they used a large number of methods for the measurement of allocentric and idiocentric tendencies (i.e., collectivism and individualism as personality constructs). They used the logic of item analysis and pointed to the methods that provided the highest correlations with all the other methods, that is, maximum convergent validity. Unfortunately, the best and the next best methods were not statistically significantly different from each other. Thus no clear superiority could be detected for one of these methods.

Study 2 showed that similar measurements can be used in Japan and in the United States and that Japanese women tend to be a bit more allocentric than Japanese men. In Study 3, a confirmatory factor analysis established the presence of seven factors. Allocentrism was measured by:

Family integrity (e.g., We should keep our aging parents with us at home.)
Interdependence (e.g., I usually feel that my relationships with others are more important than my individual accomplishments.)
Sociability (e.g., I like to live close to my good friends).

The factors composing idiocentrism were:

Competition (e.g., I enjoy working in situations involving competition with others.)
Self-reliance (e.g., I usually struggle through a personal problem by myself.)
Hedonism (e.g., It is important to me to enjoy life.)
Distance from in-groups (e.g., Whether my brother succeeds or fails in school is not my concern.).

Unfortunately, the alphas of these factors were only in the .38 (family integrity) to .70 range. Family integrity is an excellent factor for studies across cultures (e.g., Triandis et al., 1986), but it does not do well within culture, because it has very little range. In the United States, most subjects disagreed with its content.

In the present study, we added a number of items to those used previously, making sure that the items were sufficiently similar to the previous ones to obtain better alphas. In addition, we constructed items that corresponded to hypotheses provided by various researchers concerning the content of collectivism and individualism. Reviews of the literature such as Triandis (1990, 1995) and Kim et al. (1994) were used as guides for the identification of additional items.

METHOD

SCALES

The items were presented as "a new personality test." Unless otherwise noted, items were answered on 9-point scales, where 1 = *never* or *definitely no* and 9 = *always* or *definitely yes*. After each item, there was a space for the subjects to write a number between 1 and 9 that corresponded to their sense of the event's frequency or their degree of agreement with the statement.

Method 1. Its 13 statements were developed by J. B. P. Sinha to reflect collectivism or individualism (Sinha & Verma, 1994). Triandis et al. (in press) had found in their Study 1 that the sums of these items correlated very well with all the other methods used to measure these constructs. The judgment and two examples were:

> Please indicate if you are the kind of person who is likely to: (1) Ask your old parents to live with you (collectivism). (7) Spend money (e.g., send flowers) rather than take the time to visit a sick friend (individualism).

Method 2. A pool of 94 items was developed from previous measures of individualism and collectivism (e.g., Triandis et al., in press), and additional items were written for this study. Seventy of these items were identified a priori but after the data were collected, because we did not have the horizontal-vertical distinction in mind at the time we constructed the items.[1] For example,

> One should live one's life independently of others.

was identified as an H-I item and

> I would do what would please my family, even if I detested that activity.

as a V-C item.

Method 3. In this section of the questionnaire, ideas that have been suggested in the literature as possible components of individualism and collectivism were converted into items. The response format required the subject to circle one of 11 percentages, from 0 to 100%. For example,

> Suppose that most people disapprove of something you like to do. What are the chances you would do it?

Presumably, collectivists would use the 0 to 40% range of the scale, and individualists somewhat higher percentages. The intention was to correlate each of these exploratory ideas with the factors obtained from Method 2 to see if the idea is supported.

Method 4. This approach used a forced choice format to again test ideas from the literature. For example,

> What is more enjoyable? A large party or an intimate party?

The hypothesis is that the individualists will favor a large party where they will have the freedom to circulate, whereas the collectivists will prefer the close relationships that are more easily available in an intimate setting.

Method 5. Measures of an interdependent and independent self-construal were obtained through the Self-Construal Scale (SCS) constructed by Singelis (1994). Subjects responded to items on a 7-point scale: 1 = *strongly disagree* to 7 = *strongly agree*. Previous Cronbach alpha reliabilities for the two dimensions were in the .69 to .74 range. Validity has been established through interethnic comparisons and associations with collectivist commu-

TABLE 2
Ethnic Background and Religious Beliefs of Sample

	Frequency	*Percentage*[a]
Ethnic Background		
East Asian	87	32.8
West European	59	22.3
North European	46	17.4
Pacific Islander	45	17.0
East European	20	7.5
South Asian	19	7.2
Native American	17	6.4
South European	15	5.7
West Asian	12	4.5
Hispanic	7	2.6
North Asian	6	2.3
North African	3	1.1
Africa south of the Sahara	3	1.1
Religious Belief		
Christian	200	75.5
Rationalism (skepticism or no religion)	61	23.0
Buddhism	21	7.9
Confucianism	9	3.4
Shintoism	5	1.9
Hinduism	3	1.1
Islam	3	1.1
Judaism	3	1.1

a. Percentages based on $N = 265$. Percentages add to more than 100 because subjects could indicate more than one ethnic background or religious belief.

nication behaviors (see Singelis, 1994; Singelis & Brown, in press; Singelis & Sharkey, in press). Examples of such items are:

> Being able to take care of myself is a primary concern for me (individualistic).
>
> Even when I disagree with my group, I keep my opinions to myself to avoid an argument (collectivist).

Finally, we obtained the usual demographics such as sex, age, social class, ethnic background, and religion.

RESULTS

SUBJECTS

The subjects were undergraduate students from the University of Illinois in Champaign, Illinois (n = 96) and the University of Hawaii at Manoa (n = 171). Both samples included men (n = 109) and women (n = 156) with a mean age of 23 (SD = 4.60, range 18 to 55). Overall, ethnic backgrounds were quite varied (see Table 2), however, the East Asian (n = 87) and Western European (n = 59) backgrounds were the two most frequently reported. Religious beliefs were also assessed. Christianity (n = 200) and rationalism (a skepticism about religion or no religion, n = 61) were the most frequently endorsed beliefs.

We chose this sample to increase the range of our variables over what might be represented by a more homogeneous group. Although it was not the focus of our investigation, we performed a number of comparisons between the Hawaii and Illinois data. As might be expected, there were differences in means, but the comparison of correlation coefficients and consistency of alpha reliabilities suggests that the associations reported below are applicable in both samples when considered independently (see Appendix A).

SCALES

Items from the Sinha scales (Method 1 above) were summed to give scale scores. The six individualist and seven collectivist items from this scale had alpha reliabilities of .42 and .53, respectively. The SCS items (Method 5) were also summed to give scale scores with alphas of .70 for the 12 independent items and .71 for the 12 interdependent items.

Each a priori group of items for the vertical and horizontal dimensions of individualism and collectivism (Method 2) was separately subjected to a principal components factor analysis, which extracted a single unrotated factor. Items with low communalities (loading less than .35) were dropped. Items not previously classified were then correlated with scales derived from the previous

TABLE 3
Comparison of Models ($N = 267$)

	χ^2	df	p	$\Delta\chi^2$	p	χ^2/df	*GFI*[a]	*AGFI*[b]	*RMR*[c]
One-factor model	1,276.01	464	.000	—	—	2.75	0.68	0.63	0.112
Two-factor model	1,066.32	463	.000	209.69	.001	2.30	0.73	0.69	0.097
Four factor model	898.88	458	.000	167.44	.001	1.96	0.79	0.75	0.089

a. GFI = Goodness of Fit Index.
b. AGFI = Adjusted Goodnes of Fit Index.
c. RMSR = Root Mean Square Residual.

TABLE 4
Vertical and Horizontal Individualism and Collectivism Items With Lambda Coefficients

Item	*H-I*	*V-I*	*H-C*	*V-C*
Horizontal individualism (H-I)				
I often do "my own thing"	.49	(1.1)	(1.0)	(0.0)
One should live one's life independently of others	.30	(10.2)	(0.2)	(6.8)
I like my privacy	.29	(0.7)	(0.7)	(0.3)
I prefer to be direct and forthright when discussing with people	.48	(1.5)	(0.4)	(7.6)
I am a unique individual	.62	(10.3)	(3.7)	(2.3)
What happens to me is my own doing	.27	(14.2)	(1.5)	(8.0)
When I succeed, it is usually because of my abilities	.46	(1.5)	(0.9)	(0.7)
I enjoy being unique and different from others in many ways	.53	(1.3)	(2.1)	(2.4)
Vertical individualism (V-I)				
It annoys me when other people perform better than I do	(0.0)	.58	(0.1)	(0.1)
Competition is the law of nature	(0.1)	.54	(0.5)	(0.4)
When another person does better than I do, I get tense and aroused	(1.2)	.57	(0.0)	(0.4)
Without competition, it is not possible to have a good society	(0.3)	.52	(0.4)	(0.1)
Winning is everything	(3.9)	.45	(2.0)	(0.6)
It is important that I do my job better than others	(2.5)	.53	(3.4)	(0.0)
I enjoy working in situations involving competition with others	(3.2)	.46	(0.1)	(0.1)
Some people emphasize winning; I'm not one of them[a]	(0.1)	.46	(0.3)	(1.2)
Horizontal collectivism (H-C)				
The well-being of my co-workers is important to me	(0.7)	(0.9)	.67	(6.4)
If a co-worker gets a prize, I would feel proud	(7.1)	(0.1)	.42	(0.4)
If a relative were in financial difficulty, I would help within my means	(6.7)	(4.9)	.51	(0.0)
It is important to maintain harmony within my group	(4.5)	(1.7)	.50	(0.2)
I like sharing little things with my neighbors	(4.4)	(0.1)	.38	(0.7)
I feel good when I cooperate with others	(0.0)	(1.8)	.58	(0.0)
My happiness depends very much on the happiness of those around me	(6.1)	(1.2)	.48	(5.5)
To me, pleasure is spending time with others	(0.9)	(0.5)	.44	(0.7)

(continued)

TABLE 4 Continued

Item	*H-I*	*V-I*	*H-C*	*V-C*
Vertical collectivism (V-C)				
I would sacrifice an activity that I enjoy very much if my family did not approve of it	(3.1)	(2.9)	(14.7)	.57
I would do what would please my family, even if I detested that activity	(2.2)	(0.9)	(2.0)	.60
Before taking a major trip, I consult with most members of my family and many friends	(1.0)	(0.1)	(5.9)	.39
I usually sacrifice my self-interest for the benefit of my group	(0.0)	(0.5)	(17.9)	.45
Children should be taught to place duty before pleasure	(2.8)	(7.2)	(3.2)	.45
I hate to disagree with others in my group	(1.0)	(2.1)	(0.7)	.40
We should keep our aging parents with us at home	(0.2)	(8.1)	(5.2)	.28
Children should feel honored if their parents receive a distinguished award	(19.2)	(0.7)	(16.1)	.45

NOTE: Numbers in parentheses are modification indexes. These are an indication of the potential loading of an item on a factor other than that specified in the model. Notice that most of the cross loadings are between the two dimensions of collectivism or the two dimensions of individualism.

a. Indicates reflected item.

step. Items correlating more than .30 with a scale were added to that scale, provided they fit the theoretic description of the dimension. Finally, the scales were reduced to eight items each by dropping items with the lowest item total correlations. These procedures yielded 32 items divided evenly among the four dimensions (V-I, H-I, V-C, H-C).

The dimensionality of the items was checked through a confirmatory factor analysis using LISREL 7. One-, two-, and four-factor models were compared (see Table 3). As expected, the four-factor model provided a better fit than the two-factor model, which provided a better fit than the one-factor model. The items composing the four dimensions and their lambda coefficients (item loadings) and modification indexes are shown in Table 4. The alpha reliabilities for the scales were: H-I .67, V-I .74, H-C .74, and V-C .68.

TABLE 5
Correlations and Cronbach Alpha Reliabilities for Scales

	H-I	*V-I*	*H-C*	*V-C*	*SCS-I*	*SCS-T*	*SN-I*	*SN-C*	*Sex*[a]	*Cult*[b]
Horizontal individualism (H-I)	**.67**									
Vertical individualism (V-I)	–.00	**.74**								
Horizontal collectivism (H-C)	.20**	.00	**.74**							
Vertical collectivism (V-C)	–.08	.14*	.39***	**.68**						
Self-Construal Scale, independence (SCS-I)	.45***	–.01	.05	–.26***	**.70**					
Self-Construal Scale, interdependence (SCS-T)	–.25***	.09	.43***	.50***	–.24***	**.71**				
Sinha individualism items (SN-I)	–.00	.20**	–.21***	–.24***	.05	–.15*	**.42**			
Sinha collectivism items (SN-C)	–.02	–.04	.30***	.32***	–.04	.27***	–.29***	**.53**		
Sex[a]	.05	–.25***	.08	–.05	–.01	–.07	–.12*	.09	—	
Culture[b]	–.05	–.03	.05	.40***	–.28***	.27***	–.08	.00	.09	—

NOTE: Except for sex and culture correlations, $N = 267$. Cronbach alpha reliabilities for standardized variables are reported in the diagonal (in bold).

a. Sex = sex of respondent correlated (point biserial) with scale scores: Positive correlations indicate men ($n = 109$) have higher scores than women ($n = 156$).

b. Cult = self-reported ethnic background correlated (point-biserial) with scale scores: Negative correlations indicate those reporting Asian backgrounds ($n = 100$) have higher scores than those indicating European backgrounds ($n = 101$).

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

ANALYSES

Convergence

To determine the convergence of the various methods of assessing individualism and collectivism, the eight scales described above were intercorrelated (see Table 5). Although the horizontal and vertical collectivism scales were strongly correlated ($r = .39$, $p < .001$), the horizontal and vertical individualism scales were not ($r = -.00$, $p = ns$). It is also of note that the two horizontal dimensions ($r = .20$, $p < .01$) and the two vertical dimensions ($r = .14$, $p < .05$) were slightly, but significantly, positively related.

Overall, the four horizontal and vertical dimensions converged well with the other measures. The horizontal individualism scale was related positively to SCS independence ($r = .45$, $p < .001$) and negatively to SCS interdependence ($r = -.25$, $p < .001$), although the vertical individualism scale was not related to either ($r = -.01$ and $r = .09$, $p = ns$). The horizontal collectivism scale was positively related to SCS interdependence ($r = .43$, $p < .001$) but seems orthogonal to SCS independence ($r = .05$, $p = ns$). The vertical collectivism scale was strongly correlated with SCS interdependence ($r = .50$, $p < .001$) and negatively related to SCS independence ($r = -.26$, $p < .001$).

Although the low alpha reliabilities severely limit the strength of correlations possible, the Sinha scales converge with the four dimensions developed here. The Sinha individualist items correlated with:

H-I ($r = -.00$, $p = ns$)
V-I ($r = .20$, $p < .01$)
H-C ($r = -.21$, $p < .001$)
V-C ($r = -.24$, $p < .001$).

The collectivist items correlated with:

H-I ($r = -.02$, $p = ns$)
V-I ($r = -.04$, $p = ns$)
H-C ($r = .30$, $p < .001$)
V-C ($r = .32$, $p < .001$).

It should be noted that these data are self-reported and may be affected by their common methodological source. Although the

results presented below represent some differences in methodology, the need for carefully measured behavioral data remains, and we must consider our findings in this light.

Demographic Correlates

We were interested in how various demographic attributes of our sample would correlate with our four vertical and horizontal dimensions. To begin, we computed point biserial correlations with male (n = 109) and female (n = 156) groups (see Table 5). The only significant correlation (r = –.25, p < .001) indicated that women scored lower than men on the vertical individualism measure. In the first investigation of ethnic background, we formed two groups. The first group (n = 101) consisted of those indicating North, West, or East European backgrounds, but not Asian backgrounds. The second group (n = 100) consisted of those indicating East, North, or South Asian backgrounds, but not European backgrounds. Thus, although individuals could indicate more than one ethnic background, our two groups consisted only of those who indicated exclusively Eastern or Western ethnic backgrounds. The point biserial correlations of the two groups with our scales (see Table 5) indicated a significant correlation for vertical collectivism: Those in the Asian group scored higher than those in the European group. In a second, more fine-grained analysis, the four vertical and horizontal scales were regressed stepwise[2] against all 13 of the possible ethnic backgrounds (Table 6). For the regression, ethnic background was coded as 0 (indicating no influence) or 1 (indicating the subject felt influenced by that ethnic group). Because a large number of correlations were computed, and most of those at the p < .05 level did not make theoretical sense, we examined only the relationships with p < .01. Two relationships had p < .001: The West European backgrounds were negatively associated with vertical collectivism, and East Asian backgrounds were positively associated with this dimension. It should be noted that these two groups were the largest in the overall sample. For this reason, their relationship with vertical collectivism seems to be on solid ground.

The association of religion and the vertical and horizontal scales was explored via a stepwise multiple regression similar to that used for ethnic groups (see Table 7). The self-reported religious beliefs were coded as 0 for no belief or 1 for a person indicating that

TABLE 6

Results of Stepwise Multiple Regression of Vertical and Horizontal Scales on Ethnic Groups

	df	F	p	R^2	b[a]	t	p	*Partial* R^2
Horizontal individualism	1,263	4.14	< .05	0.016				
West Asian					0.125	2.04	< .05	0.016
Vertical individualism	5,259	3.98	< .01	0.07				
Africa south of Sahara					–0.145	–2.39	< .05	0.019
Pacific Islander					–0.139	–2.26	< .05	0.019
South European					0.126	2.06	< .05	0.014
Native American					–0.109	–1.80	< .08	0.011
North European					–0.091	–1.48	< .15	0.008
Horizontal collectivism	1,263	3.64	< .06	0.014				
North African					–0.117	–1.91	< .06	0.014
Vertical collectivism	3,261	16.81	< .001	0.162				
West European					–0.263	–4.45	< .001	0.103
East Asian					0.227	3.84	< .001	0.051
Africa south of Sahara					–0.086	–1.50	< .14	0.007

NOTE: The small *n* for some of these groups indicates that the results may reflect individual differences of the few people sampled rather than cultural differences.

a. Standardized beta weight.

TABLE 7

Results of Stepwise Multiple Regression of Vertical and Horizontal Scales on Religious Beliefs

	df	F	p	R^2	b[a]	t	p	*Partial* R^2
Horizontal individualism	1, 263	14.33	< .001	0.052				
Rationalism					0.227	3.79	< .001	0.052
Vertical individualism	1, 263	4.22	< .05	0.016				
Buddhism					–0.126	–2.06	< .05	0.016
Horizontal collectivism[b]	0, 264							
Vertical collectivism	2, 262	6.23	< .01	0.045				
Rationalism					–0.169	–2.80	< .01	0.030
Islam					–0.125	–2.08	< .05	0.016

a. Standardized beta weight.
b. No variables met $p < .15$ entry criterion.

they followed this belief. Although no associations were found for horizontal collectivism and religious belief, rationalism was positively associated with horizontal individualism and negatively associated with vertical collectivism. In addition, Buddhism was negatively associated with vertical individualism. The low emphasis on the vertical dimension among Buddhists and Islamic subjects may reflect an egalitarian ethic. For example, pilgrims to Mecca must wear the same clothing and be indistinguishable from others.

The final two demographic variables that were investigated were socioeconomic status (SES) and age. SES was assessed by asking subjects to identify the relevant class:

Upper upper (n = 1)
Lower upper (n = 28)
Upper middle (n = 140)
Lower middle (n = 65)
Upper lower (n = 18)
Lower lower (n = 7)

The vertical and horizontal scales were correlated with SES (6 = *upper upper* to 1 = *lower lower*). Only vertical individualism showed a small, but significant, correlation with SES ($r = .13, p < .05$). This is consistent with the relationship reported by Daab (1991). Correlations of the four horizontal and vertical scales with age did not reveal dependable relationships, but our age range (18 to 55, with 90% between 18 and 27) was not especially wide. The only American study (Noricks et al., 1987) that showed higher collectivism with age showed the effect after age 55.

Components of Individualism and Collectivism

Recall that we included a number of items in the questionnaire that were drawn from the literature as candidates for components of individualism and collectivism (Methods 3 and 4). The items from Method 3 asked subjects to indicate the frequency or chance (on a 0 to 100% scale) that a behavior would occur. These items were correlated individually with the four vertical and horizontal measures, as well as with the SCS measures (see Table 8 for items and correlations). For the most part, the items correlated in ways that are consistent with the literature on individualism and collectivism.

TABLE 8

Scale Correlations With New Items Testing Components of Individualism and Collectivism ($N = 267$)

Item	*H-I*	*V-I*	*H-C*	*V-C*	*SCS-I*	*SCS-T*
1. If you worked for a corporation that has a competitor, what are the chances that sometime in your life you would consider working for the competitor?	.08	.11	−.12*	−.15*	.19**	−.19**
2. Suppose you disagree with another person, what are the chances that you will not show the disagreement?	−.16**	−.03	−.02	.29***	−.24***	.24***
3. Suppose you would enjoy *very much* doing something that is not approved of by other people. What are the chances you would do that?	.30***	.05	−.11	−.34***	.34***	−.36***
4. Suppose most people approve of something that you find very distasteful, and pressure you to do that. What are the chances that you would do that?	−.18**	.22***	−.04	.09	−.13*	.12
5. Suppose a relative of yours failed in an important task. What are the chances that you would pretend that nothing has happened?	−.07	.19**	−.01	.20***	−.24***	.18**
6. Suppose a relative of yours succeeded in a relatively difficult task. What are the chances that you would compliment that person?	.14*	−.09	.20***	.12*	.04	.05
7. Suppose that most people disapprove of something you like to do. What are the chances that you would do it?	.28***	.01	−.22***	−.37***	.35***	−.41***
8. Suppose you dislike *very much* something that most people expect you to do. What are the chances that you would do it?	−.11	.27***	.02	.24***	−.18**	.08
9. What are the chances you would say to a close friend, "What is mine is yours?"	.18**	−.07	.42***	.15*	.13*	.24***
10. How frequently do you feel shame after one of your actions?	−.10	.11	−.06	.17**	−.18**	.11
11. How frequently do you feel guilty about something?	−.10	.15*	.00	.14*	−.23***	.16**
12. How often do you want to stand out and be noticed?	.12	.17**	−.02	−.09	.26***	−.00
13. What are the chances that you would say to a close friend, "What is mine is not to be used without permission?"	.02	.08	−.18**	−.05	−.02	−.14*

NOTE: H-I = Horizontal Individualism; V-I = Vertical Individualism; H-C = Horizontal Collectivism; V-C = Vertical Collectivism; SCS-I = Self-Construal Scale, Independence; SCS-T = Self-Construal Scale, Interdependence.
*$p < .05$; **$p < .01$; ***$p < .001$.

Several items demonstrated the utility of measuring the vertical and horizontal dimensions of individualism and collectivism. For example, responses to Item 7,

> Suppose that most people disapprove of something you like to do. What are the chances that you would do it?

were positively correlated with horizontal individualism ($r = .28$, $p < .001$) but not correlated significantly with vertical individualism ($r = .01$, $p = ns$). On the other hand, this same item was negatively correlated with horizontal collectivism ($r = -.22$, $p < .001$) and vertical collectivism ($r = -.37$, $p < .001$). Item 8, assessing the chances of doing something that is expected even though it is distasteful, correlated positively with both vertical individualism ($r = .27$, $p < .001$) and vertical collectivism ($r = .24$, $p < .001$), but not significantly with either of the horizontal dimensions. It may be that, more than individualism or collectivism per se, the recognition of hierarchical relationships evidenced in the vertical-horizontal dimension indicates an acceptance or rejection of doing what one does not like. Prior research, which would predict that collectivists are more likely to do what is expected of them, may have confounded the dimensions by focusing on horizontal individualism and vertical collectivism.

Method 4 tested ideas from the literature in a forced choice format. These items were subjected to a χ^2 analysis. To test the effects of each of the vertical and horizontal dimensions, the sample was divided by median splits on each dimension. In addition, the two ethnic groups (Asian and European), established previously according to the demographic data, were analyzed. Of the nine items presented, six showed significant differences on one or another of the dimensions (see Table 9).

Although for many of these items, subjects showed a strong preference for one of the responses, the usefulness of distinguishing between vertical and horizontal individualism and collectivism can still be seen. For example, when asked to indicate which is worse, to be rejected by one's family or to be financially dependent on one's family, those who were high on horizontal individualism were more likely to respond that being dependent is worse than were those who were low on this dimension. Other dimensions and ethnicity were not associated with this choice. At the same time, the high and low vertical individualism groups differed signifi-

TABLE 9

Frequency of Responses to Forced Choice Items[a]

	H-I		*V-I*		*H-C*		*V-C*		*Ethnicity*[b]	
	High	*Low*	*High*	*Low*	*High*	*Low*	*High*	*Low*	*Euro*	*Asian*
Which is worse? To be rejected by one's family or to be financially dependent on one's family?										
a. Be rejected	111	124	118	117	118	117	121	114	91	85
b. Be dependent	23	9	15	17	15	17	12	20	10	15
χ^2	6.84		0.13		0.13		2.21		1.20	
Probability	< .01		*ns*		*ns*		*ns*		*ns*	
Suppose that your parents and your spouse have a big fight. Whose side do you take?										
a. My parents'	22	17	20	19	18	21	26	13	8	21
b. My spouse's	94	105	99	100	100	99	92	107	80	71
χ^2	1.10		0.03		0.22		5.45		6.28	
Probability	*ns*		*ns*		*ns*		< .05		< .05	
If you had a dinner party at a fancy restaurant, would you prefer to be with										
a. your friends	114	112	106	120	114	112	113	113	86	85
b. a celebrity (e.g., famous singer) that most people would love to meet	20	19	25	14	18	21	18	21	15	14
χ^2	0.01		3.94		0.25		0.20		0.02	
Probability	*ns*		< .05		*ns*		*ns*		*ns*	

(continued)

TABLE 9 Continued

	H-I		*V-I*		*H-C*		*V-C*		*Ethnicity*[b]	
	High	*Low*	*High*	*Low*	*High*	*Low*	*High*	*Low*	*Euro*	*Asian*
How easy is it for you to go to a party where you do not know anyone?										
a. Easy	59	44	54	49	60	43	48	55	43	27
b. Difficult	74	87	77	84	72	89	83	78	58	72
χ^2	3.22		0.53		4.60		0.62		5.15	
Probability	< .08		*ns*		< .05	*ns*		< .05		
Suppose that you were making a presentation at a formal occasion. Would you be more likely to say:										
a. Compared to what has been presented before me, this is not a very important presentation	8	16	16	8	16	8	18	6	6	15
b. I have some very important things to tell you	125	116	117	124	115	126	114	127	95	84
χ^2	3.00		2.97		3.14		6.70		4.52	
Probability	< .08		<.09		<.08		<.01		<.05	
When you meet a new person, are you more interested in relatively										
a. fixed attributes (like religion, caste, place of birth)	6	9	9	6	8	7	12	3	6	15
b. variable attributes (like occupation, plans, beliefs, and attitudes)	128	124	124	128	125	127	121	131	95	84
χ^2	0.67		0.67		0.08		5.79		4.51	
Probability	*ns*		*ns*		*ns*		< .05		< .05	

NOTE: H-I = Horizontal Individualism; V-I = Vertical Individualism; H-C = Horizontal Collectivism; V-C = Vertical Collectivism.
a. High and low groups for vertical and horizontal dimensions were established by median splits on scale scores for each dimension. Slight variations in the number of responses across items are due to missing values.
b. Ethnic groups were established from responses to demographic questions.

cantly in choosing to have dinner with friends or a famous celebrity. Although it was expected that individualists would more often choose the celebrity, only those who were high on vertical individualism did so more often. Those who were high or low on horizontal individualism did not significantly differ in their choices on this item.

Finally, as with the previous items testing ideas from the literature, we found a case where the vertical and horizontal dimensions seemed to be more critical than the individualism collectivism distinction. That is, when asked if it is easy to go to a party where they do not know anyone, neither vertical dimension affected the responses, but the two horizontal dimensions did. Those who were high on horizontal collectivism were more likely to say it is easy to go to such a party than those who were low on horizontal collectivism ($\chi^2 = 4.60$, $p < .05$). In addition, similar results, although not quite reaching significance, were observed for the horizontal individualism dimension ($\chi^2 = 3.22$, $p < .08$). It may be that horizontalness, more than individualism, is responsible for the observation (Triandis, 1995) that individualists have an easier time meeting new people.

DISCUSSION

The data indicate that the distinction between horizontal and vertical collectivism and individualism provides advantages. First, the alphas for these constructs tend to be higher (in the .67 to .74 range) than the alphas of either the more specific (e.g., self-reliance, in the .38 to .70 range) or the more abstract (e.g., individualism, in the .59 to .70 range) constructs. Second, the relationship of the constructs with outside variables indicates, on a number of occasions, that paying attention to the vertical versus horizontal distinction provides new information. For example, we asked:

> Suppose most people approve of something that you find very distasteful, and pressure you to do that. What are the chances that you would do that? (Table 8, Item 4)

The horizontal individualists indicated that they would not do it ($r = -.18$, $p < .01$), but the vertical individualists indicated they would do it ($r = .22$, $p < .001$). The two collectivist dimensions did not affect the responses. Overall, this item may be taken as a

tendency to conform. This intriguing pattern might be interpreted as follows: Among individualists, verticality brings a recognition that inequalities between people necessitate a certain amount of conformity in the service of the hierarchy, whereas horizontalness increases the sense that individuals should be free from others' influence. Among collectivists faced with a similar situation, the horizontal and vertical dimensions may not be operative because of an overall pressure to conform in service of the group. We also asked:

> Suppose you dislike *very much* something that most people expect you to do. What are the chances that would do it? (Table 8, Item 8)

Here, the verticals indicated that they would do it and the horizontals indicated that they would not do it. Perhaps acceptance of inequality means that one accepts that some people have to carry out undesirable tasks. Finally, the verticals were more likely to feel guilty (Table 8, Item 11) than the horizontals.

The above analyses certainly go beyond the data, and the specific findings may be affected by chance, but the general pattern of getting different relationships with horizontal and vertical items is dependable and suggests that the distinction between horizontal and vertical items is worth making. The data of Table 9 make similar points. For example, being dependent on the family was viewed as more of a calamity by horizontal, rather than vertical, individualists; vertical collectivists, but not horizontal collectivists, were more likely to side with their parents than with their spouses in cases of a fight. Vertical individualists were especially interested in meeting a celebrity. Horizontals, both individualists and collectivists, seem more at ease than verticals when going to a party where they know no one. Excessive modesty in making public presentations, and great interest in ascribed personal attributes, seem linked to vertical collectivism only.

The horizontal-vertical collectivism constructs are statistically related to each other. If a researcher is not interested in this distinction, collapsing these two constructs would be reasonable. On the other hand, the horizontal-vertical individualism constructs are definitely distinct. Furthermore, the confirmatory factor analysis checked the three-construct solutions (not reported in Table 3), and they did not fit the data as well as the four-construct

solution. Thus it seems best to recommend that the four constructs be used in future research.

Further research might examine shifts in collectivism toward individualism (e.g., Japan, as described by Hayashi, 1992, and Iwao, 1990), which may be limited to the vertical or horizontal aspects only.

The splitting of individualism into two constructs is consistent with the findings by Gelfand, Triandis, and Chan (in press). They used multidimensional scaling of 15 elements, based on the judgments of American students. Collectivism, authoritarianism, and individualism were each represented by five elements. This scaling showed that the five individualistic elements were much more scattered than the five collectivist or the five authoritarianism elements.

Vertical individualism is related only to vertical collectivism ($r = .14, p < .05$), to Sinha's individualism ($r = .20, p < .01$), and sex ($r = -.25, p < .01$) in Table 5. That means that men are higher on this construct than women are. In short, they see themselves as independent of groups, but they accept inequalities that sometimes occur in groups. Women, on the other hand, may be less comfortable with the authority ranking of vertical individualism.

The vertical collectivism dimension showed the expected strong positive correlation with Asian American judgments and negative correlation with European American judgments (Tables 5 and 9). These associations are consistent with Hofstede's (1980) finding that power distance is negatively related with individualism. It would suggest that vertical collectivism is the essential element of collectivism, as has been discussed in previous literature. One way to discuss the two concepts is to see verticality as the acceptance of inequalities among people, and power distance as norms establishing and rewarding some forms of inequality. Thus the association of power distance and collectivism (V-C) means that the individual is not only feeling the self as a part or an aspect of the collective but is also willing to sacrifice the self for the collective, including doing duties that are distasteful. Verticality and low power distance (V-I) would allow the individual to accept inequalities as they exist, but not endorse the establishment (or existence) of norms or social institutions to perpetuate these inequalities. This is just the pattern we observe in the United States where we

may find individuals driving their BMWs to meetings of the American Civil Liberties Union. These people feel strongly that all members of society should have a *right* to be equal, even though they recognize and accept the existence of inequality.

By including the vertical and horizontal dimensions in our study of culture, researchers gain information on the way in which individuals and societies perceive and accept inequality between people. This information will allow researchers to make finer distinctions along cultural dimensions than is possible when only individualism and collectivism are considered. These distinctions may prove useful, especially when examining the sources and management of social, political, and interpersonal conflicts. Because the seeds of conflict can often be traced to competition for scarce resources, the way people perceive, accept, and manage inequality will no doubt influence the frequency, intensity, and communication of conflict. These are empirical questions that may be addressed with the instrument presented here. Behavioral data would be particularly welcome in this regard.

The agreement among the various methods incorporated in this article suggests convergent validity for the measures. The correlations with the demographic indexes were also as expected. Thus it appears that the optimal way to measure constructs in the individualism and collectivism domain is to make the distinction and measure the horizontal and vertical aspects of the constructs.

APPENDIX A
Means and Standard Deviations by Sample

	Illinois n = *96*	*Hawaii* n = *171*	t *Value*	p
Horizontal individualism (H-I)	7.01 (0.82)	7.11 (1.11)	–0.84	*ns*
Vertical individualism (V-I)	5.30 (1.32)	4.79 (1.39)	2.86	< .01
Horizontal collectivism (H-C)	6.86 (0.90)	6.99 (1.17)	–0.99	*ns*
Vertical collectivism (V-C)	5.11 (1.15)	5.63 (1.23)	–3.22	< .01
Self-Construal Scale, independence (SCS-I)	5.12 (0.67)	4.95 (0.67)	1.97	<.05
Self-Construal Scale, interdependence (SCS-T)	4.47 (0.55)	4.54 (0.69)	–0.99	*ns*
Sinha individualism items (SN-I)	4.12 (1.01)	3.92 (0.98)	1.63	*ns*
Sinha collectivism items (SN-C)	5.35 (1.07)	5.26 (1.16)	0.60	*ns*

NOTE: Sample size varies slightly in various *t* tests due to missing values. Numbers in parentheses are standard deviations.

APPENDIX B
Correlations and Cronbach Alpha Reliabilities by Sample

	H-I	*V-I*	*H-C*	*V-C*	*SCS-I*	*SCS-T*	*SN-I*	*SN-C*
Illinois (n = 96)								
Horizontal individualism (H-I)	**.60**							
Vertical individualism (V-I)	−.03	**.75**						
Horizontal collectivism (H-C)	.08	−.21[a]	**.69**					
Vertical collectivism (V-C)	−.17	.19	.33**	**.65**				
Self-Construal Scale, independence (SCS-I)	.36***	.04	.02	−.30**	**.70**			
Self-Construal Scale, interdependence (SCS-T)	−.11	−.05	.45***	.40***	−.23*	**.60**		
Sinha individualism items (SN-I)	.08	.14	−.34**	−.43[a]***	.21[a]*	−.26*	**.43**	
Sinha collectivism items (SN-C)	−.02	−.10	.42***	.47***	.01	.23*	−.41***	**.52**
Hawaii (n = 171)								
Horizontal individualism (H-I)	**.72**							
Vertical individualism (V-I)	.04	**.72**						
Horizontal collectivism (H-C)	.22**	.10[a]	**.77**					
Vertical collectivism (V-C)	−.05	.18*	.45***	*.68*				
Self-Construal Scale, independence (SCS-I)	.43***	−.10	.08	−.23**	**.70**			
Self-Construal Scale, interdependence (SCS-T)	−.32***	.16*	.41***	.54***	−.25**	**.75**		
Sinha individualism items (SN-I)	−.01	.18*	−.25**	−.11[a]	−.06[a]	−.09	**.40**	
Sinha collectivism items (SN-C)	−.04	.01	.27***	.27***	−.08	.29***	−.28***	**.55**

NOTE: Sample size varies slightly in various correlations due to missing values. Cronbach's alpha reliabilities for standardized variables are reported in the diagonal (in bold).

a. Correlations differ between samples ($p < .05$, two-tailed).

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

Notes

1. Originally, we intended to focus on the seven factors previously discussed, but we were intrigued by the quite new notion of vertical and horizontal. The seven factors were explored in the current data, and we found that they were improved somewhat over previous measurement efforts. Nonetheless, the reliabilities were still not sufficiently improved to warrant their publication here. On the other hand, as this article shows, the vertical and horizontal measures were quite interesting and useful.

2. In this type of regression, variables are entered in the order of their effect size. Variables with the strongest effects are entered one at a time until no variables meet the $p < .15$ criterion for entry.

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