An Adaptationist Model of Selfhood: Examining the Cross-Cultural Measurement Invariance of the Scales of Dual Independence and Interdependence

Author: Shinobu Suzuki

Institutional affiliation: Graduate School of International Media, Communication, and Tourism Studies, Hokkaido University

Mailing address: Graduate School of International Media, Communication, and Tourism Studies, Hokkaido University, N17 W8, Kita-ku, Sapporo, 060-0817, Japan

Email: shinobu@imc.hokudai.ac.jp

Author biography: Shinobu Suzuki is a specially appointed professor in the Graduate School of International Media, Communication, and Tourism Studies at Hokkaido University, Japan.

Abstract

This study revisits the concepts and measurement scales of Hashimoto and Yamagishi's (2016) adaptationist model of self-construals, which provides a promising framework for intercultural and cross-cultural research. Responding to a call for the establishment of measurement invariance of the scales across cultures, this study revised the scales and conducted a series of tests including tests of their dimensionality and measurement invariance across cultures. Additionally, this study examined construct and predictive validity of the revised scales across cultures. A total of 649 undergraduates from Japan and the United States were invited to respond to a survey designed for the purposes of the study. Confirmatory factor analysis indicated that the four-factor model, which consists of dual interdependence (harmony seeking and rejection avoidance) and dual independence (distinctiveness of the self and self-expression), fit the data better than alternative models across cultures. The invariance tests provided evidence to support partial configural, metric, and scalar invariance of the revised scales across cultures. The validity tests provided evidence to support construct and predictive validity of the revised scales across cultures. The results were discussed and the implications were offered.

Keywords: self-construals, measurement invariance, confirmatory factor analysis, validity tests, culture and the self, cross-cultural

An Adaptationist Model of Selfhood: Examining the Cross-Cultural Measurement Invariance of the Scales of Dual Independence and Interdependence

The concept of self-construals (Markus & Kitayama, 1991) is based on the premise that people from different cultures hold divergent views of the self, of others, and of the relationship between the two. Conceptualized as an individual-level cultural orientation, it has been theorized to mediate or explain cognitions, emotions, and motivations of individuals in a variety of social contexts, leading to the development of scales for measuring it (e.g., Gudykunst & Lee, 2003; Leung & Kim, 1997; Singelis, 1994). The self-construal construct thus has served as one of the most influential theoretical frameworks in numerous cross-cultural studies in many fields such as social psychology and communication over the past decades.

However, the self-construal construct has been criticized for its lack of validity and empirical support (Levine, et al., 2003; Matsumoto, 1999). To address this issue, researchers began to incorporate the notion that the cultural view of both independent and interdependent selves may be multidimensional.

Hashimoto and Yamagishi's studies (2013, 2016) were unique in that they derived their self-construal model of dual independence and interdependence based on an adaptationist perspective (Yamagishi, 2011; Yamagishi et al., 1998). According to the adaptationist framework, self-construals are conceptualized as psychological tools or strategies that allow individuals to adapt to a social environment (Hashimoto & Yamagishi, 2016).

They made a step forward to advance the theory of self-construal and developed measurement scales based on the theory's conceptualization of self-construal. However, the scales that measure the four facets of Hashimoto and Yamagishi's self-construal model

have some weaknesses. First, evidence to support the dimensionality of the scales has been insufficient. Second, the measurement equivalence of the scales has not been established across cultures. Third, the tests of construct and criterion-related validity for the scales across cultures have been lacking.[1] Failure to establish these mostly generalizability aspects of validity (Messick, 1995) across cultures may lead to erroneous conclusions about how self-construals are recognized and related with outcomes across different cultures.

The purpose of the present study is to address the three issues raised above to understand whether the adaptationist self-construal model of dual independence and interdependence is conceptually viable across cultures and whether the measurement scales for the model are cross-culturally equivalent. Samples from Japan and the United States were employed. That is because a number of previous studies have compared Japan and the United States, finding distinct differences in general values, cognitions, and behaviors (e.g., Gudykunst & Nishida, 1984; Hall, 1976). The knowledge gained through this study will help advance theories and research on the relationship between culture and self, facilitating theoretical explanations for cultural differences in cognitions, emotions, and motivations across cultures in the future.

Independent and Interdependent Self-Construals

People may have different images of the self, which affects how they see themselves in relation to others. These images are the self-construals. They were conceptualized as affecting an individual's cognition, emotion, and motivation in various ways (Markus & Kitayama, 1991).

According to Markus and Kitayama (1991), individuals with independent self-construal are likely to seek uniqueness, promotion of their own goals, and

self-actualization, considering one's self as separate from the social context. Those with interdependent self-construal, in contrast, would strive to fit in, maintain harmonious relationships with others, occupy their proper places, and regard one's self as connected with the social context. People from different cultures have been premised to vary systematically in the strength and impact of independent or interdependent self-construals. That is, the independent self-construal was expected to prevail in individualistic Western, primarily North American, cultures, whereas the interdependent self-construal was believed to be prevalent in collectivistic, non-Western, primarily East Asian cultures.

Researchers have used measures of self-construals to predict a variety of outcome variables in different fields such as cognitive styles, emotions, and motivations (reviewed by Gudykunst & Lee, 2003; Levine et al., 2003; Smith et al., 2013). However, meta-analyses of cross-cultural studies on self-construals (Levine et al., 2003; Matsumoto, 1999) pointed out the lack of empirical support for the expected cultural differences in the measures of independent and interdependent self-construals, thus raising objections about the validity of the self-construal construct.

Gudykunst and Lee (2003) argued that this lack of support was attributable to inadequate sampling, but they did not proceed to provide empirical evidence to support their claim. Heine, et al. (2002) attributed this lack of support to flawed measurement. Specifically, they found that the expected cultural differences were manifest only after manipulating cross-cultural reference groups. Their finding, however, does not constitute sufficient evidence to support the claim that the self-construal constructs, without cross-cultural reference groups, are essentially flawed. It is thus worthwhile to consider more fundamental problems with the concept of self-construals. Smith et al. (2013)

suggested that independent and interdependent self-construals might be too broad and diffuse. Vignoles et al. (2016) argued that researchers' convergence on a two-dimensional measurement model could have been premature, hampering research using self-construal measures.

In line with their argument, researchers focused on different ways of being independent or interdependent (e.g., Christopher et al, 2012; Hardin et al., 2004; Vignoles et al., 2016). However, no consensus has been reached on the forms of independence or interdependence that should be considered critical. In addition, most of the studies constructed item pools from existing measurement scales of self-construals or other related constructs, providing post-hoc interpretations of their factors. Accordingly, theoretical meanings of the proposed dimensions were not necessarily made clear.

Hashimoto and Yamagishi's studies (2013, 2016) were unique in that they derived their self-construal model from an adaptationist perspective (Yamagishi, 2011; Yamagishi, et al., 1998). The theoretical grounds to support the adaptationist model of dual independence and interdependence are explained in the following section.

Adaptationist Models of Self-Construals

According to an adaptationist perspective, an institution is a self-sustaining system of beliefs, behaviors, and cognitions shared among individuals, guiding their beliefs, behaviors, and cognitions, and in turn making these beliefs, behaviors, and cognitions a reality (Yamagishi et al., 2008). Culture-specific beliefs, behaviors, and cognitions are conceptualized as tools or strategies for adapting to social environments or institutions that are collectively created and maintained (Yamagishi, 2011; Yamagishi & Suzuki, 2009). The degree to which a particular tool or strategy is activated or called out in a given

situation depends on how the situation is conceptualized. Individuals generally rely on a particular tool or strategy that will produce favorable outcomes. Within the adaptationist framework, self-construals are also conceptualized as psychological tools or strategies that allow individuals to adapt to a social environment (Hashimoto & Yamagishi, 2016).

The self-construal construct was traditionally conceptualized as a fixed trait-like construct that influences and, in many cases, determines individual experiences (Markus & Kitayama, 1991). In contrast, the adaptationist view of self-construal highlights its contextualized nature; self-construals are the tools that individuals call out, possibly by different degrees, to achieve their goals in a given context depending on their conceptualization of the context. We can expect that cultures differ in the strength and influence of different facets of self-construals. However, it is possible that the relationships between these self-construals and behavioral or cognitive outcomes may not be uniform across cultures depending on how the context is conceptualized or interpreted by individuals in each culture. The adaptationist perspective of the relationship between self-construals and their outcomes is similar to the perspective of dynamic constructivists (Hong & Chiu, 2001; Morris & Fu, 2001) who regard culture as a knowledge structure which is activated as a function of social contexts, thus focusing on when cultural differences in cognition would appear, disappear or reverse.

Hashimoto and Yamagishi (2013, 2016) retained Markus and Kitayama's (1991) general framework of independence and interdependence. However, they argue that both dimensions should have two facets. With regard to interdependence, the conventional view of interdependence that focuses mainly on harmony seeking is too narrow to fully capture the social reality of cultures of interdependence. Hashimoto and Yamagishi (2013) point

out that another facet of interdependence, which is what they termed rejection avoidance, is important. Rejection avoidance refers to individuals' "sensitivity to potential envy and rejection by others in the group" (Hashimoto & Yamagishi, 2013, p. 143) to avoid others' negative perceptions and feelings. It is critical to have this kind of sensitivity to stay in the circle of closely related people, not being ostracized from the group. The function of rejection avoidance may be similar to the racial and ethnic minorities' interpretation of interdependent self-construal as a means of fitting in to avoid racism (Tawa & Suyemoto, 2010). In cultures of interdependence, activating both harmony seeking and rejection avoidance aspects of interdependence, in general, is likely to have a better probability of producing favorable outcomes. Hashimoto and Yamagishi revealed that harmony seeking and rejection avoidance are two discrete facets of interdependence. They demonstrated that harmony seeking is related to an individual's motivation with a promotion focus, whereas rejection avoidance is related to an individual's motivation with a prevention focus (Hashimoto & Yamagishi, 2013).

With regard to independence, Hashimoto and Yamagishi (2016) argue that the conventional view of independence that focuses mainly on a unique and distinct self that is detached from others, seeking one's self-actualization and promotion of one's own goals, is too narrow to fully capture the social reality of cultures of independence. They argue that this aspect of independence regards the self as principally disengaged from others. They termed this disengaging aspect of independence distinctiveness of the self. From the perspective of adaptationist theory, independent self-construal is also a psychological strategy or tool for developing relationships with other people who are not strongly connected, which calls for self-expressiveness. They argue that we should not confuse this

"engaging aspect" (p. 287) of independence, which they termed self-expression, with the disengaging aspect of independence, although the two have traditionally been considered to constitute a single dimension of independence.

As described above, however, we are short of sufficient evidence to support dimensionality of the scales both within a single culture and across cultures, and measurement invariance and validity of the model's constructs across cultures. Recent studies (Ishii & Eisen, 2018; Hashimoto, 2021) employing the adaptationist self-construal constructs have not yet resolved the above issues.[2] Therefore, the present study seeks to address them. The specific research strategy is given below.

Research Strategy

The present study examines dimensionality, measurement invariance, and validity of the concepts and measures of the adaptationist model of independence and interdependence across Japan and the United States. Responding to a call for evidence to support the dimensionality of the existing adaptationist self-construal scales across cultures, this study will start with assessing the fit of the Hashimoto and Yamagishi's (2016) 20-item four-factor self-constsrual model to the data for the Japanese and the United States samples. After that, the first research question asks about the scales' dimensionality for each sample.

RQ1: Does the four-factor solution for the adaptationist self-construal model provides a reasonable fit to the data for the Japanese and United States samples?

The second hypothesis concerns the question of measurement invariance across cultures.

RQ2: Do the four-factor self-construal scales demonstrate measurement equivalence across cultures?

This study proceeds to test the construct validity of the scales for the Japanese and United

States samples by examining whether the scales can discriminate between the two known groups.

HP_1: The adaptationist self-construal scales discriminate between the Japanese and United States samples.

Hashimoto and Yamagishi (2016) argued that the primary cultural differences between collectivistic and individualistic institutions would manifest themselves in rejection avoidance and self-expression. That is because promoting group harmony and cooperation may not be a unique strategy to a collectivistic social institution. Also, perceiving oneself as distinct may not be a unique strategy to an individualistic social institution. Therefore, this study expected that the primary differences between the two cultures would be in rejection avoidance and self-expression.

Hashimoto and Yamagishi (2016) found that the Japanese sample was higher in rejection avoidance and lower in self-expression than the United States sample as they expected. They found no significant difference in distinctiveness of the self between the two samples as expected. The evidence for harmony seeking, however, has been mixed. Hashimoto and Yamagishi (2016) found that the United States sample was higher in harmony seeking than the Japanese sample. Hashimoto and Yamagishi (2013), using a slightly different scale, found no difference in harmony seeking between Japan and the United States. Ishii and Eisen (2018), using different scales, found that a German sample was higher in self-expression and harmony seeking, and lower in rejection avoidance than a Japanese sample. They found no difference in distinctiveness of the self between the two samples, which was consistent with Hashimoto and Yamagishi's findings (2016). The results of previous research, therefore, have been mixed regarding the difference in

harmony seeking between a collectivistic social institution and an individualistic social institution. The present study will provide further evidence regarding cross-cultural differences in the four dimensions of adaptationist self-construals.

Further, this study examines predictive validity of the adaptationist self-construal scales by investigating whether the constructs predict conflict management styles in expected patterns. It also asks whether the associations vary across cultures. Conflict styles are important constructs in testing the predictive validity of the adaptationist self-construals. Adaptationist self-construals provide tools or strategies for adapting to social environments. Conflict styles concern different communication strategies for coping with interpersonal relationships in social environments. It is likely that an individual endorsing a specific self-construal will prefer using a specific conflict style to other styles.

The four dimensions of the adaptationist self-construal model will be used as predictors of three (i.e., integrating, contending, and avoiding) conflict styles, which are clearly distinguishable in terms of their characteristics: integrating as an assertive and collaborative style; contending, which is also termed competing or dominating (Cai & Fink, 2002) as an aggressive and confrontational style; avoiding as a non-assertive and non-confrontational style.

It is expected that the dual interdependent self-construal and dual independent self-construal would differentially predict conflict styles. It is also expected that harmony seeking and rejection avoidance would differentially predict conflict styles, so would distinctiveness of the self and self-expression.

For the interdependent self-construal, both harmony seeking and rejection avoidance would positively predict the avoiding style which is non-assertive and non-confrontational.[3]

In contrast, it is predicted that only harmony seeking, but not rejection avoidance, would positively predict the integrating style which is characterized by assertive but collaborative problem-solving, by actively seeking a mutually acceptable solution (Rahim, 1992). That is because harmony seeking concerns an individual's motivation to actively promote harmonious relationships, which is in line with the focus of the integrating style, whereas rejection avoidance concerns an individual's motivation to passively promote harmonious relationships by focusing on preventing further conflicts.

As for the independent self-construal, it is expected that both distinctiveness of the self and self-expression would positively predict the contending style which is aggressive and confrontational. Whether the focus is on the disengaging aspect (i.e., distinctiveness of the self) of independence or the engaging aspect (i.e., self-expression) of independence, being independent in an individual's self-construal would make him/her contending in conflict to protect his/her interests. It is also predicted that self-expression, but not distinctiveness of the self, would be a positive predictor of the integrating style. That is because the self-expression aspect of independence entails actively developing relationships with other people who are not strongly connected, which requires collaboration with others. Because the integrating style is assertive but collaborative, self-expression would be a likely predictor. The following hypothesis is offered.

HP$_2$: The four-factor adaptationist self-construal constructs predict conflict styles in expected patterns and equally across cultures.

One more hypothesis is posited regarding the above predictive validity test. That is:

HP$_3$: The adaptationist self-construal constructs mediate the relationship between culture and conflict styles.

In his in-depth review article on culture and self, Matsumoto (1999) criticized Markus and Kitayama's (1991) self-construal theory on the ground that researchers had little empirical evidence to support the two critical assumptions of the theory: (a) that the countries tested are associated with the underlying self-construals, and (b) that the specified self-construals are associated with the hypothesized cognitive, emotional, and motivational consequences. In the same article, Matsumoto (1999) also pointed out the lack of empirical evidence to support that self-constuals mediate the relationship between country/culture and psychological outcomes. Ishii and Eisen (2018), using a different scale, found that harmony seeking, which was higher for Germans than for Japanese, had a significant mediating effect on the relationship between culture and social discounting.

Previous studies pointed out that cultures differ in their preferred forms of handling conflict (e.g., Lee & Rogan, 1991; Ting-Toomey & Oetzel, 2001). If the results of this study provide evidence to support *HP_1 and HP_2*, it is reasonable to expect that adaptationist self-constrtuals mediate the relationship between culture and conflict styles. That is, if culture influences self-construals, which in turn influence preferred conflict styles, the impact of culture on preferred conflict styles should diminish once self-construals are introduced in the equation. Given that, this study hypothesized that adaptationist self-construals would have a significant mediating effect on the relationship between culture and conflict styles. This study may provide further evidence to support significant mediating effects of adaptationist self-construals.

Method

Participants

The Japanese sample consisted of 391 undergraduate students of Japanese nationality

from a university in northern Japan that has enrollments from around the nation. The students voluntarily participated in this study. Sixty-eight percent of the participants were male and 32 percent were female. The mean age of the respondents was 18.84 years (*SD* = 0.89).

The United States sample consisted of 258 undergraduate students of United States nationality from 37 different states who voluntarily participated in this study. They were drawn from a panel of respondents recruited by a Web survey company in Tokyo. Sixty-eight percent of the participants were male and 32 percent were female. The mean age of the participants was 19.60 years (*SD* = 0.89).

Procedure

Data were collected in two phases. In the first phase, data for the Japanese sample were collected through a paper-and-pencil survey. Two versions of a survey questionnaire were created in Japanese and were administered to the respondents during regular class periods at a university. One version of the questionnaire included a cover letter followed by the adaptationist self-construal scale (Hashimoto & Yamagishi, 2016) with backup items.[4] Nine new items were created through a discussion joined by two experts as backup items. They were added to the scales as a preparation for possible item deletion that might be necessary after the initial assessment of the original 20-item scale. The Japanese versions of the 20-item adaptationist self-construal scales used the exact same questionnaire items that Hashimoto and Yamagishi used in their study (2016). The other version of the questionnaire included a cover letter followed by a the same adaptationist self-construal scales and a Japanese version (Asahara, 2000) of Rahim Organizational Conflict Inventory-II, or ROCI-II (Rahim, 1983). Seventy-six participants responded to the first

version of the questionnaire, and the remaining participants responded to the second version.

In the second phase, the United States participants responded to a Web questionnaire set up by a Web survey company. Prior to the online administration of the survey, a questionnaire that was identical in content to the second version of the Japanese questionnaire was created in English. The English versions of the 20-item adaptationist self-construal scales used the exact same questionnaire items that Hashimoto and Yamagishi used in their study (2016). ROCI-II has an available English version, which was used in this study.

In creating the English version of the backup questions, a Japanese-English bilingual person translated the Japanese items into English. Another Japanese–English bilingual person independently checked the translation. The two bilinguals discussed the discrepancies between the English and Japanese questionnaires and necessary changes. This approach to translation was preferred to other major translation methods (Brislin, 1980; Sechrest, et al., 1972) because (a) it was more effective in detecting mistakes than one-shot translation, (b) it is relatively free from awkward expressions, unlike backward-forward translation, (c) it was relatively easy to perform, unlike the bilingual technique, and (d) the bilingual translators, because they knew each other, were free to criticize each other as Suzuki (1997) acknowledged.

Instrumentation

Adaptationist Self-Construal Scales

The adaptationist self-construal scales developed by Hashimoto and Yamagishi (2016) consist of 20 items. Five items represent each of the model's four dimensions:

harmony seeking, rejection avoidance, distinctiveness of the self, and self-expression. The strength of the respondents' self-construals on the four dimensions was measured by the items on a 7-point scale (1 = *does not describe me at all*; 7 = *describes me very much*). Backup items were added to the 20-item adaptationist self-construal scales.

Rahim Organizational Conflict Inventory-II

Rahim Organizational Conflict Inventory-II, or ROCI-II (Rahim, 1983), was also included in the questionnaire for the two samples for the purpose of a test of criterion-related predictive validity. This inventory measures individuals' conflict management strategies. In the questionnaire, the respondents were asked to recall a conflict that they experienced during the past year or so, if they had any. They were asked to indicate the extent to which each of the 28 descriptions describes how they perceived themselves to have managed the conflict on a 5-point scale (1 = *does not describe me at all*; 5 = *describes me very much*).

Previous research (Brew & Cairns, 2004) suggests that situational constraints affect the choice of conflict strategies. Given that, three questions were included in the questionnaire to represent three variables: distance, power, and importance. Distance indicates the extent to which the respondent had felt close to the other person prior to the conflict on a 7-point scale (1= *not at all close*; 7 = *very close*). Power describes the nature of the relationship between the respondent and the other person in the conflict on a 3-point scale (1= *the person was lower in rank or junior*; 2 = *the person was equal in rank;* 3 = *the person was higher in rank or senior*). Importance indicates the extent to which the conflict was serious on a 7-point scale (1 = *not at all serious; 7= very serious*).

As a result of a confirmatory factor analysis conducted in this study, a four-factor

model (integrating, contending, avoiding, and obliging) indicated a better fit to the data than did a five-factor model for each sample.[5]

Analysis

This study started with assessing the fit of the Hashimoto and Yamagishi's (2016) 20-item four-factor self-construal model to the data. To that end, confirmatory factor analysis was conducted separately for the Japanese and the United States samples. As a supplementary analysis, exploratory factor analysis was also conducted for each sample. When it was necessary to do so, the scale was going to be revised.

After the assessment of the 20-item scales, the analysis proceeded as follows. First, a series of confirmatory factor analyses were conducted for each sample separately to test the dimensionality of the self-construal scales and to obtain baseline models for the multi-group confirmatory factor analysis. Specifically, the analysis tested whether the four-factor solution of the model revealed a better fit to the data compared to two- or three-factor solutions for each sample.

Second, given the results of the preceding analysis, multiple-group confirmatory factor analysis was conducted for the purpose of testing measurement invariance of the scales across cultures, which included three levels of invariance: configural invariance, metric invariance, and scalar invariance (Hair, et al., 2010; Meredith, 1993; Steenkamp, & Baumgartner, 1998). The minimum level of measurement invariance required varies with the goal of analysis (Steenkamp & Baumgartner, 1998). The goals of the multi-group confirmatory factor analysis in this study were (a) to establish whether the four factors of the adaptationist self-construal model are conceptualized in the same way across cultures and (b) to conduct comparisons of means across cultures. Given that, the aforementioned

three levels of invariance were tested in this study.

Configural invariance indicates that the items demonstrate the same patterns of salient and nonsalient factor loadings across different groups. Metric invariance requires that the factor loadings of the items are invariant across different groups. Scalar invariance indicates that the items are not additively biased, that is, the item intercepts loading on the same latent variable are invariant across different groups. Accordingly, the first hypothesis of an invariant number of factors, the second hypothesis of an invariant pattern of factor loadings, and the third hypothesis of an invariant pattern of item intercepts were tested in this study.

In testing the second hypothesis of an invariant pattern of factor loadings and the third hypothesis of an invariant pattern of item intercepts, this study did not pursue full metric or scalar invariance because achieving this is unrealistic (Horn et al, 1983). Instead, it sought to achieve a less conservative standard of partial invariance (Byrne, et al., 1989; Hair et al, 2010). That is, following a proposition by several researchers (Byrne, et al., 1989; Steenkamp & Baumgartner, 1998), it was decided that metric and scalar invariance for at least one item (other than the factor loading that is fixed at 1.00 for identification purposes, and the intercept that is fixed at zero as the marker item intercept) per factor would be required to acknowledge that the pattern of factor loadings and item intercepts are invariant across groups.

Third, two kinds of validity tests were conducted. The first was a construct validity test that examined differentiation in scores for each dimension of the adaptationist self-construal model between the two samples from different cultural backgrounds. Multivariate analysis of variance was used for the test, with the four self-construal factors

being the dependent variables and national culture being the independent variable. The issue of cultural differences in response styles was addressed in this validity test (Fischer, 2004), considering that past research revealed that culture (Tasaki & Shin, 2017) and mode of data collection (Weijters, et al., 2008) affect response styles in surveys.

Fourth, criterion-related predictive validity tests were conducted by a series of hierarchical multiple regression analysis. The basic strategy for the hierarchical multiple regression analysis, which included categorical independent variable (cultural membership entered as a dummy-coded independent variable) and its interaction with continuous variables (the four self-construal dimensions, which served as independent variables) followed the procedure recommended by past research (Aiken & West, 1991; Pedhazur, 1997). With the effects of three situational variables (distance, power, and importance), entered in the first block, controlled, the dummy-coded variable (Japan = 0; US = 1) of culture was entered in the second block. After that, the four self-construal variables were entered in the third block. The four interaction terms between culture and each of the four self construal variables were entered in the fourth block. Significant interaction effects of the interaction terms entered in the fourth block indicate that self-construals had different effects on the dependent variable between the two groups. In that case, the use of common regression slopes for the two samples was not justifiable, which necessitates a separate regression analysis for each sample. The mediating effects of self-construals on the relationship between culture and conflict styles were tested by the procedure that Baron and Kenny (1986) proposed.

Results

Assessment of the Hashimoto and Yamagishi's 20-item Self-Construal Scales

This study assessed the fit of the four-factor model for the 20-item adaptationist self-construal scales (Hashimto and Yamagishi, 2016) to the data for the Japanese and the United States samples. Confirmatory factor analysis was conducted with LISREL 8.72 structural equation modeling with maximum likelihood estimation. The degree to which the data fit the hypothesized model was examined in light of multiple fit indices, which generally indicate a good fit with the following cutoff values: χ^2/df less than 5.0 (Wheaton, et al., 1977), root mean square error of approximation, RMSEA < .08 (MacCallum et al., 1996), and comparative fit index or CFI value close to .95 in combination with standardized root mean square residual or SRMR value close to .09 (Hu & Bentler, 1999). Those items with non-significant parameter estimates, that is, less than $|\pm 1.96|$, as well as those with high modification index values on unexpected factor(s), were closely inspected (Byrne, 1998). Throughout the analysis, some constrained parameters in the residual TD or Theta Delta matrix exhibiting high degrees of misfit were respecified to vary freely only when the misfit was attributable to redundancy in item content within the same factor, which was justifiable, following Byrne (1998).

For the Japanese sample, the fit statistics for the four-factor model were: χ^2 (164) = 615.17, $p < .01$, $\chi^2/df = 3.75$, RMSEA = 0.087, CFI = 0.91, and SRMR = 0.087. After relaxing constraints on two TD or Theta Delta parameters, the fit improved: χ^2 (162) = 537.16, $p < .01$, $\chi^2/df = 3.32$, RMSEA = 0.077, CFI = 0.92, and SRMR = 0.083. Although the fit statistics were generally close to the acceptable cutoff values, items 4 and 5 for the distinctiveness of the self dimension indicated the highest modification index values of 23.89 and 23.18, respectively, of all the modification indices for the 20 items, suggesting the items' cross-loadings on another factor.

For the United States sample, the fit statistics for the four-factor model were: χ^2 (164) = 390.40, $p < .01$, $\chi^2/df = 2.38$, RMSEA = 0.069, CFI = 0.93, and SRMR = 0.079. Although the fit statistics were generally close to the acceptable cut off values, item 5 for the self-expression dimension indicated the highest modification index value of 35.54, and item 4 for the distinctiveness of the self dimension indicated the second-highest modification index value of 23.56, suggesting the items' cross-loadings on another factor.

Based on the results of the confirmatory factor analysis, exploratory analysis was also conducted as supplementary analysis (see factor loadings patterns and internal consistencies for the four factors in Table 1). In judging whether an item should be retained or not, a minimum primary loading of .40 was used (Stevens, 1986), with the secondary loading being .20 less than the primary loading (Howard, 2016).[6] For both samples, items 4 and 5 of the distinctiveness of the self dimension did not load onto the primary factor, which was mostly consistent with the results of confirmatory factor analysis. For the United States sample, items 4 and 5 for the self-expression dimension loaded on the primary factor above .40, but they did not demonstrate a difference of .20 between their primary and alternative factor loadings.

Given the results, items 4 and 5 for the distinctiveness of the self dimension were deleted from the item list for both samples. One item for the distinctiveness of the self dimension and one item for the self-expression dimension were selected from the backup item pool and added to the item list. The revised model was re-estimated by exploratory factor analysis for each sample (see Table 2 and Appendix for details). Based on the results, twenty items, which included five items for harmony seeking, five items for rejection avoidance, four items for distinctiveness of the self, and six items for self-expression, were

retained for the Japanese sample. For the United States sample, 18 items, which included five items for harmony seeking, five items for rejection avoidance, four items for distinctiveness of the self, and four items for self-expression, were retained. Internal consistencies for the revised scales were above .70, which is generally considered acceptable, for all the four factors for both samples. These revised scales were used in testing the research questions and hypotheses for this study.

Tests of Dimensionality: Single-Group Confirmatory Factor Analysis

The first research question asked whether the four-factor solution for the revised adaptationist self-construal model would provide a reasonable fit to the data for each sample. See Table 3 for details.

For the Japanese sample, the revised 20-item four-factor model that consists of harmony seeking, rejection avoidance, distinctiveness of the self, and self-expression indicated a good fit to the data. It was also found to be the best-fitting model of all the models. The revised four-factor model demonstrated a better fit than the three-factor model ($\Delta\chi^2$ (8) = 327.97, $p < .05$). It also demonstrated a better fit than the two-factor model ($\Delta\chi^2$ (4) = 736.80, $p < .05$).

For the United States sample, the revised 18-item four-factor model indicated a good fit to the data. It was also found to be the best-fitting model of all the models. It demonstrated a better fit than the three-factor model ($\Delta\chi^2$ (3) = 88.80, $p < .05$). It also demonstrated a better fit than the two-factor model ($\Delta\chi^2$ (5) = 375.38, $p < .05$).

Correlations between the four dimensions were calculated. Table 4 shows the results.

Measurement Invariance across Cultures: Multiple-Group Confirmatory Factor Analysis

The second research question asked whether the adaptationist four-factor self-construal construct would demonstrate measurement invariance across the two samples. Given the results of the preceding analysis, multi-group confirmatory factor analysis was conducted to test measurement invariance across the two samples. The first hypothesis of an invariant number of factors across groups, or configural invariance, was tested using the 18 items that were common across the two samples. The fit of the four-factor model (Model 1: the configural invariance model) was acceptable. See Table 5 for details.

Given these results, the second hypothesis of an invariant pattern of factor loadings, or metric invariance, was tested by constraining the matrix of factor loadings to be invariant across the two samples (Model 2: the full metric invariance model). Given a significant increase in χ^2 values ($\Delta\chi^2$ (14) = 44.71, $p < .01$), the second hypothesis was rejected, but RMSEA increased only by insubstantial 0.001, and SRMR by 0.011, and CFI remained to be 0.95. Given the results of the χ^2 difference test, the constraints on the parameters were relaxed, one at a time, to identify the parameters that were not equivalent across the two samples. As a result, item 2 for harmony seeking and item 5 for rejection avoidance were found to load on respective factors by different degrees across the two samples. The factor loadings for the remaining items were found to be equivalent across the two samples. Based on the criteria for deciding on the equivalent pattern of factor loadings across groups described above (Byrne, et al., 1989; Steenkamp & Baumgartner, 1998), it was decided that partial metric invariance (Model 3: the partial metric invariance model) was achieved.

Next, the third hypothesis of invariant item intercepts, or scalar invariance, was tested. Given that partial metric invariance was supported, only the intercepts whose factor

loadings were invariant were constrained to be equal across cultures (Model 4: the full scalar invariance model). A comparison between Model 3 and Model 4 led to a significant increase in χ^2 values ($\Delta\chi^2$ (14) = 158.15, $p < .01$), indicating that the third hypothesis was rejected. The RMSEA value increased by 0.011, SRMR increased by 0.007, and CFI decreased by 0.02. Therefore, constraints on the intercepts were relaxed, one at a time to identify the parameters that were not equivalent across the two samples. As a result, a total of 7 items (items 2 and 4 for harmony seeking, items 3, 4, and 5 for rejection avoidance, item 2 for the distinctiveness of the self, and item 2 for self-expression) were found to have non-equivalent intercepts values across cultures. The intercepts of the remaining items were found to be equivalent across the two samples. Based on the criteria for deciding on the equivalent pattern of item intercepts described above (Byrne, et al., 1989; Steenkamp & Baumgartner, 1998), it was decided that partial scalar invariance (Model 5: the partial scalar invariance model) was achieved. The RMSEA, SRMR, and CFI values for Model 5 improved to become the same values for Model 3. The second research question was answered in the affirmative.

Validity Tests

The first hypothesis predicted that the adaptationist self-construal constructs would discriminate between known groups. A construct validity test was conducted to examine differences in scores for each dimension of the adaptationist self-construal model between the two samples. In calculating cultural differences in scores, response biases may distort responses to rating scales. Therefore, the issue of cultural differences in response styles is addressed in this validity test. Based on Fischer (2004), who extensively reviewed standardization methods to adjust for response bias in cross-cultural research, the present

study employed within-culture standardization (Bond, 1988; Leung & Bond, 1989).[7]

Multivariate analysis of variance, using culture as the independent variable and the four self-construal dimensions as dependent variables, indicated a significant difference in self-construals between the two cultures (Wilks' Lambda = .93, F (4, 645) = 11.95, p < .0001, η^2 = .07). The results of the univariate analysis of variance showed that culture had a significant effect on rejection avoidance (F (1, 648) = 27.52, p < .001, partial η^2 = .04) and self-expression (F (1, 648) = 30.51, p < .001, partial η^2 = .05). The effect of culture on harmony seeking (F (1, 648) = 0.02, p > .05, partial η^2 < .001) and distinctiveness of the self (F (1, 648) = 2.52, p > .05, partial η^2 = .04) was not significant. For rejection avoidance, the mean score for the Japanese sample was significantly higher than that for the United States sample. For self-expression, the mean score for the United States sample was significantly higher than that for the Japanese sample. The results provided evidence to support the validity of the adaptationist self-construal construct by demonstrating that the scores for two dimensions were differentiated between the two cultures. The results provided evidence to support the first hypothesis. See Figure 1 for estimated means for the four self-construal dimensions, with standard errors, for the two samples.

The second hypothesis concerned predictive validity of the four-factor adaptationist self-construals. It was posited that they would predict three different conflict styles of integrating, contending, and avoiding in the expected patterns and equally across cultures. The results provided evidence to support the predictive validity of the adaptationist self-construals, with no differences in slopes or regression coefficients between cultures. The results provided evidence to support the second hypothesis.

The interdependent self-construal and the independent self-construal predicted the

conflict styles in differential manners. Also, harmony seeking and rejection avoidance differentially predicted conflict styles, so did distinctiveness of the self and self-expression. Specifically, both interdependent self-construal dimensions of harmony seeking and rejection avoidance positively predicted the avoiding style which is non-assertive and non-confrontational. However, only harmony seeking, but not rejection avoidance, positively predicted the integrating style whose focuses are assertive but collaborative. As for the independent self-construal, both independent self-construal dimensions of distinctiveness of the self and self-expression predicted the contending style, which is aggressive and confrontational. However, only self-expression, but not distinctiveness of the self, positively predicted the integrating style whose focuses are assertive but collaborative. See Tables 6, 7, and 8 for details.

This study proceeded to test the third hypothesis. In the presence of significant main effects of culture on a conflict style, it was examined whether a self-construal variable had a mediating effect on the relationship between culture and the dependent variable. In the preceding analysis, culture was found to have a significant main effect on two dependent variables—the integrating and the avoiding styles. Culture was also found to have a significant effect on rejection avoidance and self-expression in the preceding MANOVA analysis. Therefore, it was examined whether self-expression had a significant mediating effect on the relationship between culture and the integrating style. Further, it was examined whether rejection avoidance had a significant mediating effect on the relationship between culture and the avoiding style. Self-expression, although not predicted in advance, was found to have a significant negative effect on the avoiding style. Given that, it was also examined whether self-expression had a significant mediating effect on the relationship

between culture and the avoiding style.

With the integrating style as the dependent variable, the result of the Sobel test was significant for self-expression ($z = 2.58$, $p < .01$). With the avoiding style as the dependent variable, the result of the Sobel test was significant for rejection avoidance ($z = -3.96$, $p < .001$). With the avoiding style as the dependent variable, the result of the Sobel test was significant for self-expression ($z = 2.37$, $p < .01$). These results provided evidence to support third hypothesis. In either case, the regression coefficients for culture diminished but remained significant after the introduction of self-construal variables. Therefore, rejection avoidance and self-expression were interpreted to partially mediate the relationships between culture and the avoiding and integrating styles.

Discussion

This study aimed at establishing measurement invariance of the adaptationist four-factor self-construal model between Japan and the United States. In addition, this study aimed at examining construct and predictive validity of the adaptationist four-factor self-construal scales across the two cultures. Accomplishing these goals allows researchers to reach accurate conclusions about the differences in self-construals across cultures and about how they are useful in predicting outcomes across cultures. That promotes researchers' understandings of the structure of self-construals, adding knowledge to the generalizability aspects (Messick, 1995) of validity for the concepts and measures of the adaptationist self-construal model across cultures. Indeed, the findings of this study provided evidence to support measurement invariance of the revised four-factor adaptationist self-construal scales across the two cultures. They also provided evidence to support construct and predictive validity of the revised scales across the two cultures. These

two cultures are traditionally known to be very different (e.g., Gudykunst & Nishida, 1984; Hall, 1976)—Japan is supposed to represent a collectivistic culture, whereas the United States is supposed to represent an individualistic culture. Given that, the findings of this study suggest that the model and the scales passed one critical test toward an accurate estimation of cultural differences in self-construals and their relationships with other important variables.

Tests of Dimensionality

Consistent with the conceptualization by Hashimoto and Yamagishi (2016), the current study found the adaptationist self-construals for Japan and the United States were best represented equally by four factors, which consist of dual interdependence of harmony seeking and rejection avoidance and dual independence of distinctiveness of the self and self-expression. The empirical evidence provides a justification for incorporating (a) the rejection avoidance aspect into the conventionally accepted conceptualization of interdependent self-construal focused on harmony seeking, and (b) the self-expression aspect into the conventionally accepted conceptualization of independent self-construal focused on distinctiveness of the self. This expanded conceptualization of self-construals is expected to promote explanation of other aspects of the self that have not been explored in different cultures.

Measurement Invariance of the Adaptationist Self-Construal Scales

The current study found support for partial measurement invariance of the revised four-factor adaptationist self-construal scales, either in terms of configural invariance, metric invariance, and scalar invariance. This study found support for partial configural invariance of the scales, which suggests that the self-construal items demonstrate similar

patterns of salient and nonsalient factor loadings across the two cultures. Seeking to achieve a less conservative standard of partial invariance (Byrne, et al., 1989), which is a reasonably realistic goal, it also found support for partial metric invariance, which suggests that factor loadings of the self-construal items were found to be generally invariant across the two cultures. In addition, this study found support for partial scalar invariance, which suggests that the item intercepts loading on the same latent variable were generally invariant across the two cultures. All in all, the findings of the measurement invariance tests suggest that the respondents in the two cultures interpret the four facets of adaptationist self-construals in similar manners, which allows us to proceed to calculate or compare scores for each self-construal facet in each culture with these measurement scales.

Construct Validity Test

This study found evidence to support construct validity in terms of score differentiation for rejection avoidance and self-expression between the two known groups—Japan and the United States. The results indicated significant differences in these two dimensions of self-construals between the two groups in compliance with the expected patterns. The scores for rejection avoidance were found to be higher for the Japanese sample, which supposedly represents a collectivistic culture, than the United States sample, which supposedly represents an individualistic culture. The scores for self-expression were found to be higher for the United States sample than for the Japanese sample. No significant difference was found in the distinctiveness of the self between the two cultures. These findings are consistent with the findings of previous studies (Hashimoto & Yamagishi, 2016; Ishii & Eisen, 2018). With regard to the difference in harmony seeking between cultures, the evidence has been mixed (Hashimoto & Yamagishi, 2013, 2016; Ishii

& Eisen, 2018). The findings of this study corresponded with Hashimoto and Yamagishi's reasoning (2016) that the goal of promoting group harmony and cooperation may not be so much a strategy unique to a collectivistic social institution.

Predictive Validity Tests

Overall, the predictive validity tests provided support for differential functioning between the interdependent and independent self-construals equally for both samples. They also provided support for differential functioning between the two dimensions of interdependence and between the two dimensions of independence, respectively in the expected patterns. Specifically, the dual interdependent self-construal and dual independent self-construal predicted the use of avoiding and contending conflict styles, respectively. Also, harmony seeking, but not rejection avoidance was found to be a positive predictor of the integrating style. Self-expression, but not distinctiveness of the self, was found to be a positive predictor of the integrating style.

Some relationships were not laid out and predicted in advance but the results can be interpreted as follows. That harmony seeking, but not rejection avoidance, turned out to be a significant negative predictor of the contending style. It makes sense because the contending style, which is aggressive and confrontational, often goes against an individual's motivation to seek harmony. Self-expression turned out to be a significant negative predictor of the avoiding style. It is reasonable that an individual lacking a motivation to be self-expressive may rely on the avoiding style, which is passive, non-assertive, and non-confrontational. Finally, distinctiveness of the self was found to be a significant positive predictor of the avoiding style. Avoiding could be driven by multiple motivations such as being cooperative and uncooperative (Dailey & Palomares, 2004). An

individual greater in distinctiveness of the self is likely to be focused on the self and the interests of the self. When the benefit in pursuing the conflict is small, such individual is likely to choose to withdraw from the conflict, which may be a reflection of the uncooperative aspect of the avoiding style.

Conclusion

All in all, this study added to the literature on the study of self-construals by revising the existing adaptationist self-construal model of dual interdependence and independence. It also established dimensionality and measurement invariance of the revised model across the two cultures. It also provided a piece of evidence to support construct and predictive validity of the four dimensions of the revised adaptationist self-construal model across the two cultures. The finding that the four-dimensional adaptationist model of self-construals can be applied equally across different cultures is important. That is because it helps researchers draw accurate and unbiased conclusions about cultural differences in self-construals and their relationships with outcome variables. It has pedagogical implications, too, by providing an alternative tool to measure individuals' self-construals and understand the relationships between the self, culture, and perceived behaviors in the light of a different framework.

Limitations and Future Research

This study has a few limitations. First, this is a two-culture study, which limits the generalizability of the findings, although choosing Japan and the United States, which have traditionally been known to be represent collectivistic and individualistic cultures, was reasonable as an initial step. It would be desirable for the adaptationist self-construals to be re-tested in multi-cultural studies. Second, although the four dimensions of the

adaptationist self-construals are likely to capture critical aspects of self-construals, they may not be exhaustive. As Hashimoto and Yamagishi (2016) acknowledge, the scope of self-expression may be too narrow, possibly excluding other facets that are important in the individualistic institution. It is worthwhile to explore other self-construal dimensions that are critical in predicting outcomes.

References

Aiken, L.S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions.* Sage Publications, Inc.

Asahara, C. (2000). Construction of Japanese version of Rahim Organizational Conflict Inventory-II. *Japanese Journal of Personality, 9*(1), 54-55. https://doi.org/10.2132/jjpjspp.9.1_54

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. https://doi.org/10.1037/0022-3514.51.6.1173

Billet, J. B., & McClendon, M. J. (2000). Modeling acquiescence in measurement models for two balanced sets of items. *Structural Equation Modeling, 7*(4), 608-628. https://doi.org/10.1207/S15328007SEM0704_5

Bond, M. H. (1988). Finding universal dimensions of individual variation in multicultural studies of values: The Rokeach and Chinese value surveys. *Journal of Personality and Social Psychology, 55*(6), 1009-1015. https://doi.org/10.1037/0022-3514.55.6.1009

Brannick, M. T. (1995). Critical comments on applying covariance structure modeling. *Journal of Organizational Behavior, 16*(3), 201-213. https://doi.org/10.1002/job.4030160303

Brew, F. P., & Cairns, D. R. (2004). Do culture or situational constraints determine choice of direct and indirect styles in intercultural workplace conflicts. *International Journal of Intercultural Relations, 28*(5), 331-352. https://doi.org/10.1016/j.ijintrel.2004.09.001

Brislin, R. (1980). *Translation: Applications and research.* New York: John Wiley.

Byrne, B. M. (1998). *Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming.* Mahwah, NJ: Lawrence Erlbaum.

Byrne, B. M., Shavelson, R. J., & Muthen, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin, 105*(3), 456-466. https://doi.org/10.1037/0033-2909.105.3.456

Cai, D. A., & Fink, E. L. (2002). Conflict style differences between individualists and collectivists. *Communication Monographs, 69*(1), 67-87. https://doi.org/10.1080/003637750216536

Christopher, M. S., Norris, P., D'Souza, J. B., & Tiernan, K. A. (2012). A test of the multidimensionality of the Self-Construal Scale in Thailand and the United States. *Journal of Cross-Cultural Psychology, 43*(5), 759-773. https://dx.doi.org/10.1177/0022022111406119

Dailey, R. M., & Palomares, N. A. (2004). Strategic topic avoidance: An investigation of topic avoidance frequency, strategies used, and relational correlations. *Communication Monographs, 7*(4), 471-496. https://doi.org/10.1080/0363452042000307443

Fischer, R. (2004). Standardization to account for cross-cultural response bias: A classification of score adjustment procedures and review of research in JCCP. *Journal of Cross-Cultural Psychology, 35*(3), 263-282. https://doi.org/10.1177/0022022104264122

Gudykunst, W. B., & Lee, C. M. (2003). Assessing the validity of self-construal scales: A response to Levine et al. *Human Communication Research, 29*(2), 253-274. https://dx.doi.org/10.1111/j.1468-2958.2003.tb00838.x

Gudykunst, W. B., & Nishida, T. (1984). Individual and cultural influences on uncertainty

reduction. *Communication Monographs, 51*(1), 23-36. https://doi.org/10.1080/03637758409390181

Hair, J. F. Jr., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

Hall, E. T. (1976). *Beyond culture.* New York: Doubleday.

Hardin, E. E., Leong, F. T. L., & Bhagwat, A. A. (2004). Factor structure of the Self-Construal Scale revisited: Implications for the multidimensionality of self-construal. *Journal of Cross-Cultural Psychology, 35*(3), 327-345. https://dx.doi.org/10.1177/0022022104264125

Harrington, L., & Liu, J. H. (2002). Self-enhancement and attitudes toward high achievers: A bicultural view of the independent and interdependent self. *Journal of Cross-Cultural Psychology, 33*(1), 37-55. https://doi/10.1177/0022022102033001003

Hashimoto, H. (2021). Cross-generational differences in independence and interdependence: Discrepancies between their actual and ideal selves in the Japanese cultural context. *Frontiers in Psychology, 12*:676526. https://doi.org/10.3389/fpsyg.2021.676526

Hashimoto, H., & Yamagishi, T. (2013). Two faces of interdependence: Harmony seeking and rejection avoidance. *Asian Journal of Social Psychology, 16*(2), 142-151. https://doi.org/10.1111/ajsp.12022

Hashimoto, H., & Yamagishi, T. (2016). Duality of independence and interdependence: An adaptationist perspective. *Asian Journal of Social Psychology, 19*(4), 286-297. https://doi.org/10.1111/ajsp.12145

Heine, S. J., Lehman, D. R., Peng, K., Greenholtz, J. (2002). What's wrong with

cross-cultural comparisons of subjective Likert scales?: The reference-group effect. *Journal of Personality and Social Psychology, 82*(6), 903-918. https://doi.org/10.1037/0022-3514.82.6.903

Hong, Y., & Chiu, C. (2001). Toward a paradigm shift: From cross-cultural differences in social cognition to social-cognitive mediation of cultural differences. *Social Cognition, 19(3),* 181-196. https://org/doi/10.1521/soco.19.3.181.21471

Howard, M. C. (2016). A review of exploratory factor analysis decisions and overview of current practices: What we are doing and how can we improve? *International Journal of Human-Computer Interaction, 32*(1), 51-62. http:/dx.doi.org/10.1080/10447318.2015.1087664

Horn, J., McArdle, J., & Mason, R. (1983). When is invariance not invariant: A practical scientist's look at the ethereal concept of factor invariance. *The Southern Psychologist, 1*(4), 179-188.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Ishii, K., & Eisen, C. (2018). Cultural similarities and differences in social discounting: The mediating role of harmony seeking. *Frontiers in Psychology, 9*:1426. https://doi.org/10.3389/fpsyg.2018.01426

Lee, H. O., & Rogan, R. G. (1991). A cross-cultural comparison of organizational conflict management behaviors. *International Journal of Conflict Management, 2(3),* 181-199. https://doi.org/10.1108/eb022698

Leung, K., & Bond, M. H. (1989). On the empirical identification of dimensions for

cross-cultural comparisons. *Journal of Cross-Cultural Psychology, 20*(2), 133-151. https://doi.org/10.1177/0022022189202002

Leung, T., & Kim, M. S. (1997). *A revised self-construal scale. Unpublished manuscript,* University of Hawaii at Manoa, Honolulu.

Levine, T. R., Bresnahan, M. H., Park, H. S., Lapinski, M. K., Wittenbaum, G. M., Shearman, S., M., Lee, S. Y., Cheung, D., & Ohashi, R. (2003). Self-construal scales lack validity. *Human Communication Research, 29*(2), 210-252. https://dx.doi.org/10.1111/j.1468.2003.tb00837.x

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*(2)*, 1*30–149. https://doi.org/10.1037/1082-989X.1.2.130

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*(2), 224-253. https://dx.doi.org/10.1037/0033-295X.98.2.224

Matsumoto, D. (1999). Culture and self: An empirical assessment of Markus and Kitayama's theory of independent and interdependent self-construals. *Asian Journal of Social Psychology, 2*(3), 289-310. https://dx.doi.org/10/10.1111/1467-839X.00042

Meade, A. W., & Lautenschlager, G. J. (2004). A Monte-Carlo study of confirmatory factor analysis tests of measurement equivalence/invariance. *Structural Equation Modeling, 11*(1), 60-72. https://doi.org/10.1207/S15328007SEM1101_5

Meredith, W. (1993). Measurement invariance, factor analysis, and factorial invariance. *Psychometrika, 58*(4), 525-543. https://doi.org/10.1007/BF02294825

Morris, M. W., & Fu, H. (2001). How does culture influence conflict resolution? A dynamic

constructivist analysis. *Social Cognition, 19*(3), 324-349. https://org/doi/10.1521/soco.19.3.324.21475

Messick, S. (1995). Validity of psychology assessment: Validation of inferences from person's responses and performance as scientific inquiry into score meaning. *American Psychologist, 50*(9), 741-749. https://psycnet.apa.org/doi/10.1037/0003-066X.50.9.741

Pedhazur, E. J., (1997). *Multiple regression in behavioral research: Explanation and prediction* (3rd ed). Fort Worth, TX: Wadsworth Thomson Learning.

Pruit, d. G., & Rubin, J. Z. (1986). *Social conflict.* New York: McGraw-Hill.

Rahim, M. A. (1983). A measure of styles of handling conflict. *Academy of Management Journal, 26*(2), 368-376. https://doi.org/10.2307/255985

Rahim, M. A. (1992). *Managing conflict in organizations* (2nd ed.). New York: Praeger.

Sechrest, L., Fay, T. L., & Zaidi, S. M. H. (1972). Problems of translation in cross-cultural research. *Journal of Cross-Cultural Psychology, 3*(1), 41-56. https://doi.org/10.1177/002202217200300103

Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychological Bulletin, 20*(5), 580-591. https://dx.doi.org/10.1177/0146167294205014

Smith, p. B., Fischer, R., Vignoles, V. L., & Bond, M. H. (2013). *Understanding social psychology across cultures: Engaging with others in a changing world.* London, UK: Sage.

Steenkamp, J. E. M., & Baumgartner, H. (1998). Assessing measurement invariance in cross-national consumer research. *Journal of Consumer Research, 25*(1), 78-90. https://doi.org/10.1086/209528

Stevens, S. (1986). *Applied multivariate methods for the social sciences.* Hillsdale, NJ: Lawrence Erlbaum.

Suzuki, S. (1997). Cultural transmission in international organizations: Impact of interpersonal communication patterns in intergroup contexts. *Human Communication Research, 24*(1), 147-180. https://doi.org/10.1111/j.1468-2958.1997.tb00590.x

Tasaki, K., & Shin, J. (2017). Japanese response bias: Cross-level and cross-national comparisons on response styles. *Japanese Journal of Psychology, 88*(1), 32-42. https://doi.org/10.4992/jjpsy.88.15065

Tawa, J., & Suyemoto, K. (2010). The influence of race and power on self-construal in bicultural Asian Americans. *Asian American Journal of Psychology, 1*(4), 275-289. https://doi.org/10.1037/a0021388

Ting-Toomey, S., & Oetzel, J. G. (2001). *Managing intercultural conflict effectively.* Thousand Oaks, CA: Sage.

Weijters, B., Schillewaert, N., & Geuens, M. (2008). Assessing response styles across modes of data collection. *Journal of Academy of Marketing Science, 36*(3), 400-422. https://doi.org/10.1007/s11747-007-0077-6

Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. (1977). Assessing reliability and stability in panel models. *Sociological Methodology, 8*, 84-136. https://dx.doi.org/10.2307/270754

Yamagishi, T. (2011). Micro-macro dynamics of the cultural construction of reality: A niche construction approach to culture. *Advance in Culture and Psychology* (Vo. 1, pp. 251-308). https://doi:10.1093/acprof:oso/9780195380392.003.0006

Yamagishi, T., Cook, K. S., & Watanabe, M. (1998). Uncertainty, trust and commitment

formation in the United States and Japan. *American Journal of Sociology, 104*(1), 165-194. https://doi.org/10.1086/210005

Yamagishi, T., Hashimoto, H., & Schug, J. (2008). Preferences versus strategies as explanations for culture-specific behavior. *Psychological Science, 19*(6), 579-584. https://doi.org/10.1111%2Fj.1467-9280.2008.02126.x

Yamagishi, T., & Suzuki, N. (2009). An institutional approach to culture. In M. Schaller, A. Norenzayan, S. Heine, T. Yamagishi & T. Kameda (Eds.), *Evolution, culture and the human mind* (pp. 185-203). New York: Psychology Press.

Vignoles, V. L., Owe, E., Becker, M., Smith, P. B., Easterbrook, M. J., Brown, R., Gonzalez, R., Didier, N., Carrasco, D., Cadena, M. P., Lay, S., Schwartz, S. J., Des Rosiers, S. E., Villamar, J. A., Gavreliuc, A., Zinkeng, M., Kreuzbauer, R., Baguma, P., Martin, M., . . ., & Bond, M. H. (2016). Beyond the 'east–west' dichotomy: Global variation in cultural models of self. *Journal of Experimental Psychology: General, 145*(8), *9*66-1000. https://doi.org/10.1037/xge0000175

Footnotes

[1]Hashimoto and Yamagishi (2016) tested dimensionality of the two-factor models of independent and interdependent construals, respectively, for a Japanese sample (N = 459), finding evidence to support for the two-factor model over one-factor model for the interdependent construal (CFI = .931, RMSEA = .075) but not for the independent construal (CFI = .859, RMSEA = .106). CFI values above .90 can be generally regarded as a model that fits well (Hair, et al., 2010). RMSEA values ranging from .08 to .10 generally indicate mediocre fit and those greater than .10 indicate poor fit (Byrne, 1998). Hashimoto and Yamagishi (2016) also reported that they tested scale equivalence of their four-factor self-construal model across the Japanese and the United States samples in terms of factor loading patterns. They reported the fit statistics to be as follows: CFI = .843 and RMSEA = .079. The CFI value did not exceed the regularly accepted cutoff value for the fit statistics. Given that, we are short of evidence to support the within-culture and cross-cultural validity of the four-factor adaptationist self-construal scales. Regarding tests of validity, Hashimoto and Yamagishi (2013) did provide construct validity evidence to support differentiation between rejection avoidance and harmony seeking for a Japanese sample.

[2]Hashimoto (2021) conducted confirmatory factor analysis of the two-factor (self-expression and rejection avoidance) model with a Japanese sample (N = 1,000) and reported the fit statistics: CFI = 0.901, RMSEA = 0.114, GFI = 0.907). Hashimoto also conducted confirmatory factor analysis of the three-factor (self-expression, harmony seeking, and rejection avoidance) model with a Japanese sample (N = 500). The fit statistics were: CFI = 0.902, RMSEA = 0.089, GFI = 0.893). In either analysis, RMSEA values did not exceed the generally accepted cutoff value. Ishii and Eisen

(2018) measured the four constructs of adaptationist self-construals using eight items, whose specifics were not reported, for each subscale without any dimensionality tests.

[3]The avoiding style, because of its passive and inactive outlook, used to be interpreted as an uncooperative style (Pruit & Rubin, 1986). Later, it was found that the style could also be cooperative and preferred by people from becoming overly emotional and aggressive (Daily & Palomares, 2004). Given that, it is predicted that both dimensions of the interdependent self-construals, regardless of whether it is focused on promotion of harmony or prevention of further conflict, would predict the use of avoiding style.

[4]The first version of the Japanese questionnaire was originally developed and used for another research project, thus did not include conflict style questions.

[5]Confirmatory factor analysis was conducted. In comparing a pair of nested models, a chi-square difference test was conducted. Previous research (Brannick, 1995; Meade & Lautenschlager, 2004) pointed out that the test's results can be too conservative in large samples. However, the samples sizes for the conflict style models in this study were not large (n = 267 for Japan, n = 232 for the United States). Hu and Bentler (1999) referred to a sample size of 250 as an example of a small sample. For that reason, the use of chi-square difference test was deemed acceptable. For the Japanese sample, the revised final four-factor model, with three unreliable items (2, 17, and 22) removed, indicated an acceptable fit (χ^2 (258) = 582.32, $p < .01$, χ^2/df = 2.26, RMSEA = 0.07, CFI = 0.96, SRMR = 0.086). The fit of the 28-item five-factor model was not better than the fit of the 28-item four-factor model with $\Delta\chi^2$ (4) = -320.25, $p > .05$. For the US sample, the revised final 26-item four-factor model, with two unreliable items (11 and 17) removed, indicated an acceptable fit (χ^2 (291) = 625.83, $p < .01$, χ^2/df = 2.15, RMSEA = 0.075, CFI = 0.95, SRMR = 0.086). The fit of

the 28-item five-factor model was not better than the fit of the 28-item four-factor model with $\Delta\chi^2$ (4) = -133.81, $p > .05$.

[6]Howard (2016) listed three conditions that researchers need to consider in selecting satisfactory variables in exploratory factor analysis: (a) loading on their primary factor above .40, (b) demonstrating a difference of .20 between their primary and alternative factor loadings, and (c) loading onto alternative factors below .30. This study applied rules (a) and (b), but not (c), because the first two rules are reasonably sufficient to distinguish a primary factor and alternative factors.

[7]The score adjustment was made across respondents and dimensions within each sample, using means and standard deviations. First, the raw mean score (adjusted for the number of items) for each of the four dimensions was calculated for each respondent, using the 18 items that were found to be common across the two samples. Second, the mean score across all the four dimensions and all respondents in each sample (the grand sample mean) was calculated. Third, the grand sample mean was subtracted from the raw mean score for each dimension for each respondent, which created a deviation score. Fourth, the deviation score was adjusted by dividing it by the standard deviation across all dimensions and all respondents in each sample (the grand sample standard deviation). The resulting score represents the endorsement of a dimension by a respondent relative to other respondents in a sample. The assumption behind this procedure is that the total self-construal resources consisting of the total mean scores of the four dimensions add up to the same fixed amount in each sample (Fischer, 2004; Harrington & Liu, 2002).

Researchers proposed methods of dealing with response styles within the framework of structural equation modeling by incorporating one of more response style factors into the models (e.g., Billet & McClendon, 2000; Weijters, et al., 2008).

Some of the methods require a separate battery of questionnaire items, which increases the burden on the respondents. Even they do not, the style factors may correlate with the content factors, which could preclude accurate estimation of response styles. For these reasons, the conventional standardization method was employed in this study.

Table 1

Factor Loadings for the Original 20-item Adaptationist Self-Construal Scales

	Japan				United States			
Factor Items	1	2	3	4	1	2	3	4
Harmony seeking			(α = .79)				(α = .80)	
1	.15	-.04	.79	.03	.29	.69	.15	.09
2	.17	-.13	.70	.01	.25	.57	.17	.13
3	.06	.07	.62	.13	.09	.73	-.05	.39
4	.21	.04	.55	.08	.01	.55	.27	.10
5	.12	.11	.63	.07	.14	.62	.18	.16
Rejection avoidance			(α = .85)				(α = .79)	
1	.86	-.10	.19	.09	.76	.12	-.15	-.07
2	.87	-.13	.04	.04	.60	.14	-.06	.08
3	.53	-.05	.05	.06	.65	.15	.03	.01
4	.60	-.22	.34	.03	.44	.19	-.01	-.04
5	.65	-.17	.18	.02	.78	.10	-.12	.14
Distinctiveness of the self			(α = .65)				(α = .70)	
1	.13	.24	.00	.45	.07	.33	.19	.53
2	.08	.25	.11	.54	-.03	.11	.18	.75
3	.05	.12	.06	.99	.08	.21	.28	.59
4	-.04	.26	-.28	.12	.43	-.12	.19	.29
5	-.07	.40	-.14	.14	.09	.09	.46	.32
Self-expression			(α = .82)				(α = .79)	
1	-.21	.66	.02	.19	-.18	.17	.75	.08
2	-.17	.64	-.11	.11	-.02	.11	.57	.27
3	-.10	.66	-.14	.23	-.11	.16	.73	.27
4	-.10	.70	.16	.25	-.10	.19	.53	.36
5	-.13	.64	.12	.24	.17	.27	.42	.31
Eigen- value	4.60	3.65	2.04	1.15	5.35	3.26	1.52	1.14
% of common variance	23.02	18.23	10.21	5.74	26.75	16.30	7.58	5.71

Note. The results of exploratory factor analysis using generalized least squares extraction with equamax rotation: the Japanese sample *(n* = 391); the United States sample (*n* = 258). Those items that had primary loadings onto their expected factor above .40 with a difference of .20 between their primary and alternative factor loadings are enclosed within a box.

Table 2

Factor Loadings for the Revised Adaptationist Self-Construal Scales

	Japan				United States			
Factor	1	2	3	4	1	2	3	4
Items								
Harmony seeking			(α = .79)			(α = .80)		
1	-.02	.15	.80	-.03	.32	.65	.11	.17
2	-.08	.18	.70	-.05	.23	.59	.12	.16
3	.05	.05	.62	.12	.11	.70	.42	-.08
4	.07	.22	.53	.04	.01	.58	.08	.28
5	.06	.10	.64	.07	.14	.64	.16	.16
Rejection avoidancee			(α = .85)			(α = .79)		
1	-.07	.87	.19	.03	.77	.11	-.10	-.12
2	-.10	.88	.04	-.01	.62	.11	.08	-.05
3	-.09	.51	.06	.11	.65	.13	.03	.04
4	-.24	.59	.34	.08	.44	.17	.02	-.04
5	-.21	.63	.19	.06	.78	.09	.10	-.11
Distinctiveness of the self			(α = .75)			(α = .75)		
1	.14	.10	.01	.65	.07	.31	.62	.10
2	.22	.08	.13	.62	-.01	.13	.68	.17
3	.19	.10	.10	.74	.11	.20	.55	.28
4								
5								
6	.21	-.04	-.14	.61	.01	.05	.57	.33
Self-expression			(α = .83)			(α = .71)		
1	.72	-.20	.17	.16	-.19	.16	.15	.71
2	.61	-.18	-.10	.13	-.02	.10	.31	.56
3	.72	-.09	-.15	.23	-.10	.13	.35	.74
4	.66	-.12	.17	.31	-.11	.18	.43	.47
5	.54	-.15	.14	.27	.16	.27	.36	.33
6	.61	-.03	.04	.16	-.04	.20	-.14	.42
Eigen-value	4.65	3.89	2.03	1.22	5.33	3.26	1.45	1.23
% of common variance	23.22	19.47	10.17	6.12	26.65	16.29	7.24	6.17

Note. The results of exploratory factor analysis using generalized least squares extraction with equamax rotation: the Japanese sample *(n* = 391); the United States sample (*n* = 258). Those items that had primary loadings onto their expected factor above .40 with a difference of .20 between their primary and alternative factor loadings are enclosed within each box. They were retained as the satisfactory items and used in the subsequent analysis.

Table 3

Single-Group Confirmatory Factor Analysis for the Revised Adaptationist Self-Construal Scales

Model	χ^2	*df*	χ^2/df	RMSEA	CFI	SRMR
Japanese sample						
Four-factor model[a]	441.68	161	2.74	0.069	0.95	0.067
Three-factor model[b]	769.65	167	4.61	0.100	0.88	0.094
Two-factor model[c]	1178.48	169	6.97	0.140	0.80	0.120
United States sample						
Four-factor model	267.41	129	2.07	0.063	0.95	0.063
Three-factor model[b]	356.21	132	2.70	0.088	0.92	0.079
Two-factor model[c]	642.79	134	4.80	0.150	0.81	0.120

Note. Based on the results of exploratory factor analysis, the fit of the 20-item model was estimated for the Japanese sample *(n* = 391), whereas the fit of the 18-item model was estimated for the United States sample (*n* = 258).

[a]Constraints on three parameters for the TD or Theta Delta matrix were relaxed in re-estimating the four-factor model for the Japanese sample. Before the re-specification, the fit statistics had been: χ^2 (164) = 538.17, $p < .01$, χ^2/df = 3.28, RMSEA = 0.078, CFI = 0.93, SRMR = 0.070.

[b]The three factors comprised of (a) distinctiveness of the self + self-expression, (b) harmony seeking, and (c) rejection avoidance.

[c]The two factors comprised of (a) distinctiveness of the self + self-expression and (b) harmony seeking + rejection avoidance.

Table 4

Correlations between the Revised Adaptationist Self-Construals

	1. (HS)	2. (RA)	3. (DS)	4. (SE)
1. Harmony seeking	--			
(HS)	--			
	--			
2. Rejection avoidance	.33***	--		
(RA)	.35***			
	.32***	--		
3. Distinctiveness of the self	.25***	.07	--	
(DS)	.10	.09	--	
	.45***	.09	--	
4. Self-expression	.12**	-.23***	.41***	--
(SE)	.02	-.28***	.44***	--
	.35***	-.14*	.45***	--

Note. The correlations are based on the revised models, using 20 items for the Japanese sample *(n* = 391), and 18 items for the United States sample (*n* = 258). The correlation coefficients are presented in the following order from the top to the bottom: pan-cultural (all the data combined; *N* = 649), the Japanese sample, and the United States sample.
*$p < .05$. **$p < .01$, ***$p < .001$.

Table 5

Multiple-Group Confirmatory Factor Analysis for the Revised Adaptationist Self-Construal Scales

Model	χ^2	*df*	χ^2/df	RMSEA	CFI	SRMR
Model 1:						
Configural invariance[a]	583.49	254	2.30	0.064	0.95	0.063
Model 2:						
Full metric invariance[b]	628.20	268	2.34	0.065	0.95	0.074
Model 3:						
Partial metric invariance[c]	595.67	266	2.24	0.062	0.95	0.066
Model 4:						
Full scalar invariance[d]	753.82	280	2.69	0.073	0.93	0.073
Model 5:						
Partial scalar invariance[e]	613.73	273	2.45	0.062	0.95	0.066

Note. The results of multiple-group confirmatory factor analysis for the Japanese (n = 391) and the United States samples (n = 258).

[a]This model is for testing the validity of a four-factor structure.

[b]This model is for testing an invariant pattern of factor loadings.

[c]The equality constraints on factor loadings for two items that were found to be non-equivalent across the two groups were relaxed in estimating this model.

[d]This model is for testing an invariant pattern of item intercepts.

[e]The equality constraints on intercepts for seven items that were found to be non-equivalent across the two groups were relaxed in estimating this model.

Table 6

Multiple Regression Analysis with Intergrating Style as the Dependent Variable

	R^2	R^2 Change	F Change	β	t
Step1:					
Situations[a]	.11	.10	18.15***		
Step 2:					
+ Culture[b]	.13	.03	14.47***	.17	3.80***
Step 3:					
+ Self-construals	.23	.10	14.16***		
Harmony seeking				.30	6.38***
Rejection avoidance				-.08	-1.62
Distinctiveness of the self				.01	0.17
Self-expression				.01	2.20*
Culture				.14	3.14**
Step 4:					
+ Culture x Self-construals[c]	.24	.01	2.35		

Note. The multiple regression results for the Japanese (n = 247) and the United States (n = 232) samples. The self-construal and conflict style scores were standardized by the procedure detailed in *Footnote* 7.

[a]The situational variables entered in Step 1 included distance (β = .32, t = 6.90***), power (β = -.06, t = -1.24), and importance (β = -.02, t = -0.47), which remained in the equation through Step 4.

[b]Culture was a dummy-coded variable: Japan = 0; US = 1.

[c]The four interaction terms between culture and self-construals, none of which was significant at $p < .05$: culture x harmony seeking (β = .03, t = 0.41), culture x rejection avoidance (β = .11, t = 1.73), culture x distinctiveness of the self (β = .04, t = 0.67), and culture x self-expression (β = .10, t = 1.67).

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

Table 7

Multiple Regression Analysis with Contending Style as the Dependent Variable

	R^2	R^2 Change	F Change	β	t
Step1:					
Situations[a]	.03	.031	4.67		
Step 2:					
+ Culture[b]	.03	<.01	1.16	-0.5	-1.08
Step 3:					
+ Self-construals	.13	.10	17.71***		
Harmony seeking				-.12	-2.45**
Rejection avoidance				.01	0.22
Distinctiveness of the self				.20	3.91***
Self-expression				.19	3.71**
Culture				-.08	-1.74
Step 4:					
+ Culture x Self-construals[c]	.13	<.01	0.83		

Note. The multiple regression results for the Japanese (n = 247) and the United States (n = 232) samples. The self-construal and conflict style scores were standardized by the procedure detailed in *Footnote* 7.

[a]The situational variables entered in Step 1 included distance (β = -.01, t = -0.30), power (β = .15, t = 3.32***), and importance (β = .06, t = 1.32), which remained in the equation through Step 4.

[b]Culture was a dummy-coded variable: Japan = 0; US = 1.

[c]The four interaction terms between culture and self-construals, none of which was significant at $p < .05$: culture x harmony seeking (β = .04, t = 0.54), culture x rejection avoidance (β = .01, t = 0.08), culture x distinctiveness of the self (β = .01, t = 0.90), and culture x self-expression (β = .09, t = 0.18).

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

Table 8

Multiple Regression Analysis with Avoiding Style as the Dependent Variable

	R^2	R^2 Change	F Change	β	t
Step1:					
Situations[a]	.03	.03	4.40**		
Step 2:					
+ Culture[b]	.05	.02	11.92***	-.16	-3.45***
Step 3:					
+ Self-construals	.17	.12	16.79***		
Harmony seeking				.22	4.47***
Rejection avoidance				.14	2.80**
Distinctiveness of the self				.09	1.76
Self-expression				-.15	-3.08**
Culture				-.10	-2.33*
Step 4:					
+ Culture x Self-construals[c]	.18	.01	0.12		

Note. The multiple regression results for the Japanese (n = 247) and the United States (n = 232) samples. The self-construal and conflict style scores were standardized by the procedure detailed in *Footnote* 7.

[a]The situational variables entered in Step 1 included distance (β = .07, t = 1.53), power (β = -.10, t = -2.23*), and importance (β = -.11, t = -2.30*), which remained in the equation through Step 4.

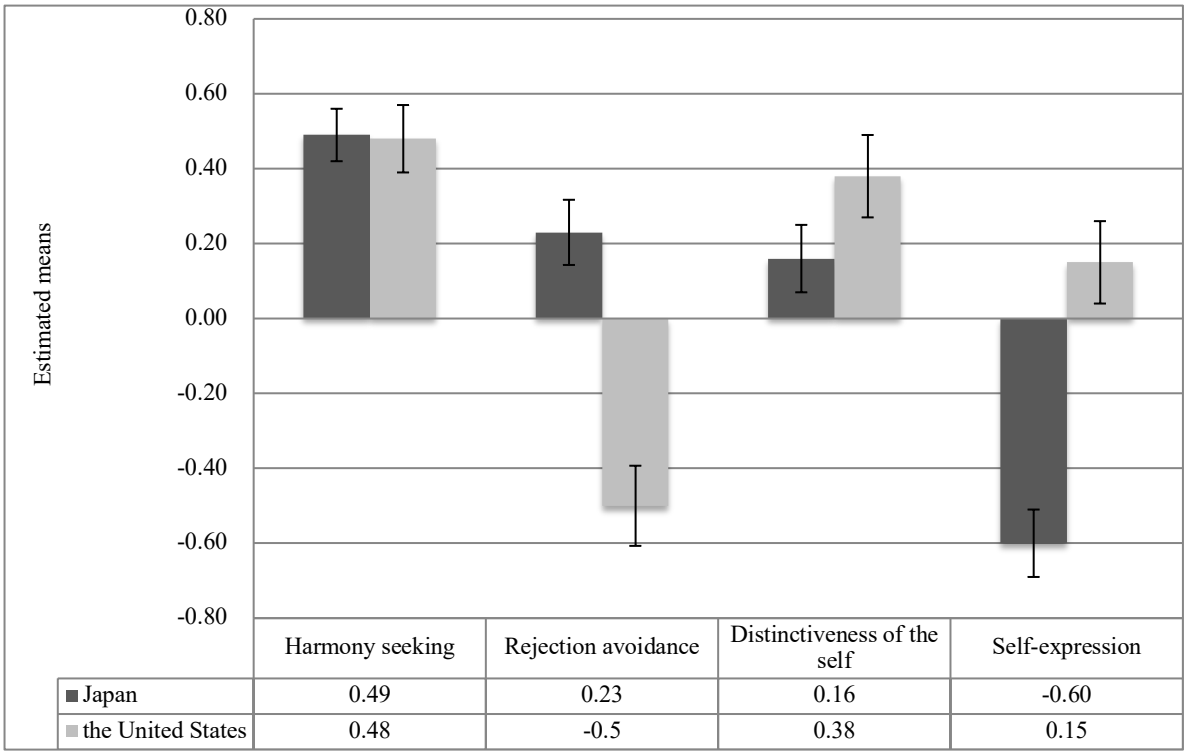
[b]Culture was a dummy-coded variable: Japan = 0; US = 1.

[c]The four interaction terms between culture and self-construals, none of which was significant at $p < .05$: culture x harmony seeking (β = -.09, t = 1.22), culture x rejection avoidance (β = .06, t = 0.93), culture x distinctiveness of the self (β = .08, t = 1.30), and culture x self-expression (β = .06, t = 0.90).

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

Figure 1

Estimated Means of Harmony seeking, Rejection avoidance, Distinctiveness of the Self, and Self-expression



	Harmony seeking	Rejection avoidance	Distinctiveness of the self	Self-expression
Japan	0.49	0.23	0.16	-0.60
the United States	0.48	-0.5	0.38	0.15

Note. The results of MANOVA for the Japanese (n = 391) and the United States (n = 258) samples. In calculating the means, score adjustment was made based on the procedure detailed in *Footnote 7.*

Appendix

Revised Adaptationist Self-Construal Scales

Harmony seeking

1. I try to respect the feelings of others.
2. I value maintaining harmony with others.
3. I feel happy if I can be helpful to others, even if it doesn't benefit me.
4. I feel good when I cooperate with others.
5. I always try to put myself in other people's shoes when thinking about things.

Rejection avoidance

1. I find myself being concerned about what others think of me.
2. I find myself feeling anxious if people are watching me.
3. I often feel anxious about the nature of my relationships with others and their status as compared to mine.
4. I often behave in a way that will keep others from disliking me.
5. I sometimes get so anxious about what other people might think that I am prevented from doing what I really want to do.

Distinctiveness of the self

1. I want to live my life differently from others.
2. I prefer to be different from others.
3. I want to live my own life free from others' control.
4. If it meant that I had to give up doing things as I like, I wouldn't ask someone for help.[a]
5. I usually make my decisions only by myself.[a]
6. I prefer to do what I want without letting others influence me.[b]

Self-expression

1. I always express my opinions in a straightforward manner.
2. I would rather say explicitly what I really think than beat around the bush to avoid hurting someone's feelings.
3. I prefer to be direct and forthright when I talk with people.
4. I always make my position clear.[c]
5. I always try to have my own opinions.[c]
6. I prefer to show my inner feelings without hiding them.[b]

Note. Items 1 through 5 for each dimension were included in Hashimoto and Yamagishi's (2016) original 20-item adaptationist self-construal scales. The revised adaptationist self-construal scale for the distinctiveness of the self included items 1, 2, 3, and 6 for both the Japanese and US samples. The revised adaptationist self-construal scale for self-expression included items 1 through 6 for the Japanese sample, whereas it included items 1, 2, 3, and 6 for the US sample.

[a]This item was deleted because it did not load onto the expected primary factor above .40 for both samples in exploratory factor analysis.

[b]This item, which had been included in the backup item pool, was added in the revising the scales for both samples.

[c]This item loaded onto two factors, self-expression and distinctiveness of the self, for the US sample in re-estimating the scales by exploratory factor analysis. It was thus not retained in the final version for the US sample. It was retained for the Japanese sample.