

The Self Group Distinction Scale: A new approach to measure individualism and collectivism in adolescents

Takuya Yanagida¹, Dagmar Strohmeier², Yuichi Toda³ &
Christiane Spiel⁴

Abstract

Individualism/Collectivism (I/C) was defined as a group orientation characterized by the degree of the convergence of an individual's opinion with an anchor group opinion. The *Self Group Distinction* (SGD) Scale as a new measurement using difference scores was developed. In sum, 532 Japanese adolescents with a mean age of 12.3 years ($SD = 1.78$ years) and 277 Austrian with a mean age of 11.96 years ($SD = 1.81$ years) were asked to indicate their own and the perceived class opinion with respect to seven items covering different aspects of I/C. Confirmatory factor analyses of difference scores demonstrated scalar measurement invariance between cultural groups. Validity was demonstrated by a smaller self-group distinction in Japanese compared with Austrian adolescents.

Keywords: individualism, collectivism, cultural differences, cross-cultural, measurement

¹ Correspondence concerning this article should be addressed to: Mag. Takuya Yanagida, School of Applied Health and Social Sciences, University of Applied Sciences Upper Austria, Garnisonstr. 21, 4020 Linz, Austria; email: takuya.yanagida@fh-linz.at

² University of Applied Sciences Upper Austria, Austria

³ Osaka University of Education, Japan

⁴ University of Vienna, Austria

Individualism and collectivism (I/C) are widely used constructs to explain differences in social behaviour between people living in different cultural contexts. Most studies have been conducted with adults while studies on adolescents are rather sparse. The main goal of the present paper is to introduce a new approach to measure I/C in adolescents.

Usually, individualism and collectivism (I/C) have been broadly defined referring to several content domains. For instance, Kim, Triandis, Kagitcibasi, Choi and Yoon (1994) proposed four main defining attributes and identified 60 additional attributes. Some instruments captured I/C as a uni-dimensional, bipolar construct (e.g., Hui, 1988), while others distinguished several independent I/C constructs (e.g., Singelis, Triandis, Bhawuk, & Gelfand, 1995). Furthermore, Oyserman, Coon and Kemmelmeier (2002) identified six content domains capturing individualism and eight content domains capturing collectivism. To date, I/C has most often been measured with a selection from these content domains while no agreement on a core definition on I/C has been achieved.

Studies that compared Japanese adults with adults stemming from individualistic countries (e.g., Austria; Hofstede, 2001) regarding several content domains (see Oyserman, et al., 2002) produced inconclusive results. For instance, there is an ongoing debate about whether people with Japanese origin should be considered collectivistic or not (Markus & Kitayama, 1991; Takano & Sogon, 2008). We assume that these inconsistencies partly stem from the heterogeneity of content domains investigated in the different studies. Clearly, there is the need for a focused definition of I/C and a new measurement approach which does not solely rely on an arbitrary selection of different content domains. Therefore, the main goals of the present study are (1) to propose a focused definition of I/C and (2) to develop a new measurement approach.

We define the I/C construct as group orientation characterized by the degree of the assumed convergence of an individual's opinion with an anchor group opinion. In other words we define "individualism" / "collectivism" as a psychological process in which self-group distinction is existent (= individualism) or negligible (= collectivism). Thus, we conceptualize I/C as an uni-dimensional, bipolar construct.

Development of a new measurement approach

To begin with, it is necessary to use an adequate measurement strategy to represent the essence of the proposed definition of I/C. One option is to rely on the subjective assessment of the distinction between self and group opinion based on a relevant anchor group, for example "*Compared with my group, I am ...*". This direct approach to measure a possible self-group distinction has several limitations. For instance, participants have to consider their own opinion and the anchor group opinion simultaneously which requires a high level of abstract thinking. In addition, this way of asking might be affected by social desirability when respondents consciously intend to minimize the difference between their personal and an assumed group opinion. Other answering biases located in the individual might also be at work if a direct self-group distinction measurement approach is applied. Another option is to rely on an indirect measurement approach by asking the participants separately about their own opinion and a relevant anchor group

opinion and to subsequently calculate difference scores between these two items. Example items would consist of a combination of the item “I am ...” and the item “My group is ...”. Such an indirect approach substantially reduces the cognitive complexity of the items and is more suitable for children and adolescents. This indirect approach to measure self-group distinction can also be expected to be less influenced by social desirability biases. Consequently, the indirect approach represents a more objective estimate of the perceived distinction between self and group opinion than the direct approach. Furthermore, by calculating difference scores within individuals answering biases located in the individual are controlled per item. Thus, our new approach relies on an indirect measurement. We ask adolescents separately about their own opinion and a relevant anchor group opinion. We assume that the individually calculated difference scores between these opinions represent the self-group distinction.

Second, regarding the content of the items, it is crucial to define a relevant anchor group which is meaningful for the intended participants. Hui (1988) suggested several relational contexts, namely *spouse*, *parent*, *kin*, *neighbour*, *friend*, and *co-worker* which could serve as anchor groups for adult participants. So far, for adolescents meaningful relational contexts for I/C measurement have not been proposed. Because all adolescents are enrolled in schools we decided to take the class as the anchor group for developing the new measurement. Content domains for I/C found in meta-analyses (e.g., Oysermann et al. 2002) were used to formulate the concrete items. Obviously, when using the indirect approach of measurement the content of the items formulated for self and group must be identical to be able to calculate difference scores.

Third, for making valid comparisons between different cultural groups, latent mean and covariance structures should be used (Little, 1997). An important precondition for this approach is to constrain factor loadings and intercepts. This corresponds to intercept or scalar measurement invariance (Chen, 2008). Intercept or scalar measurement invariance ensures that mean differences between cultural groups is attributed to latent characteristics and not to inconsistent measurement characteristics. Consequently, our new instrument should fulfil intercept or scalar invariance.

The present study

The main goal of the present study was to develop a new approach to measure individualism and collectivism in adolescents based on the degree of the convergence of an individual's opinion with an anchor group opinion. This new approach is called *Self Group Distinction* (SGD) Scale. After establishing measurement invariance, the validity of the SGD Scale was tested in comparing latent means between Japanese and Austrian adolescents. We expect higher levels of difference scores in the Austrians compared with the Japanese adolescents.

Method

Procedure

Japanese and Austrian adolescents were chosen to participate in this research, because Austria represents a vertically oriented individualistic culture, while Japan represents a vertically oriented collectivistic culture (Singelis, et al., 1995; Triandis, 1995).

Japanese adolescents were recruited from sixteen classes of one elementary and one junior high school situated in a city in Japan⁵. In line with standard ethical procedures in Japan, the school principals and teachers had to accept the study before data collection.

Austrian adolescents were recruited in eleven classes of one elementary and one academic secondary school situated in a city in Austria⁶. In line with standard ethical procedures in Austria, the local school council, the school principals and the parents had to actively accept the study before data collection.

Sample

In sum, 532 Japanese students (53% boys) aged 12.33 (SD = 1.78) and 277 Austrian students (54% boys) aged 11.96 (SD = 1.81) participated in this study. Altogether, 64 records (7.91%) were incomplete. The percentage of missing values across the 14 variables varied between 1.11 and 2.72%. Missing data were imputed 20 times separately within Japanese and Austrian students based on multivariate imputation by chained equations implemented in the mice package in R (van Buuren & Groothuis-Oudshoorn, 2011). The imputation model not only included all variables used in the analyses but several potential auxiliary variables (Collins, Schafer, & Kam, 2001).

Instrument

The *Self Group Distinction* (SGD) scale comprised two question blocks (perceived group opinion vs. personal opinion), each containing seven items of equivalent content.

Perceived Group Opinion. The first item block measured the perceived group opinion and was administered with the following introduction:

In this section, we want to know what your class thinks about various topics. Please think about the general opinion in your class.

Personal Opinion. The second item block measured the personal opinion and was administered with the following introduction:

⁵ In Japan, elementary school comprises grades 1 to 6 and junior high school comprises grades 7 to 9.

⁶ In Austria, elementary school comprises grades 1 to 4. After primary school pupils can either attend a general secondary school (grade 5 to 8) or an academic secondary school (grade 5 to 12).

In this section, we want to know what you think about various topics. Please think about your own opinion.

The two question blocks (perceived group opinion vs. personal opinion) comprised the same seven items:

What does your class think ... / What do you think ...

- (1) ... of classmates asking for advice when they have a problem? (advice seeking)
- (2) ... of solving tasks in groups? (group activity)
- (3) ... of classmates holding a different opinion than the teacher does? (independence)
- (4) ... of classmates, who do not want to participate in group activity? (group activity)
- (5) ... of other classmates, who want to push through their own opinion? (independence)
- (6) ... of classmates solving a difficult task completely on their own? (independence)
- (7) ... of a classmate refusing to change his or her opinion, even though all the others think differently than he or she does? (independence)

The contents of these seven items, *advice seeking*, *group activity*, and *independence* represent three main content domains of individualism and collectivism and were taken from Oyserman et al. (2002).

For all items the answer options were presented on a five point Likert-Scale: *I think this is very good (5), rather good (4), neither good nor bad (3), rather bad (2), and very bad (1).*

To measure *Self Group Distinction*, the difference of each pair of items was computed, i.e., the person opinion of each individual compared with his or her perceived class opinion. The absolute values of the differences represent the degree of the *Self Group Distinction*. Thus, the content of the *Self Group Distinction* scale is not of primary interest, but the degree of the assumed convergence between an adolescent's personal opinion with the class opinion. Scale scores are derived by averaging the items (absolute values of the differences). Cronbach's alpha for the Japanese and Austrian samples are $\alpha = .72$ and $\alpha = .59$, respectively. Table 1 shows item-total correlation and internal consistencies of the Self-Group Distinction Scale for Japanese and Austria samples.

Table 1:
Means, Standard Deviations, Item-Total Correlation and Internal Consistencies of the
Self Group Distinction (SGD) Scale

	<i>M</i>	<i>SD</i>	Item-Total Correlation	α
Whole sample	0.47	0.46	.40-.46	.72
Austria	0.72	0.46	.19-.39	.59
Japan	0.33	0.39	.38-.48	.72

Statistical analysis

In order to compare latent means between cultural groups, measurement invariance needs to be established. The following steps were taken to test for MI (van de Schoot, Lugtig & Hox 2012): First, we fitted a single-factor measurement model for each cultural group separately (configural invariance). Next, we ran a model where the factor loadings were constrained to be equal across cultural groups (metric invariance). Lastly, we ran a model where the factor loadings and the intercepts were constrained to be equal (scalar invariance). After establishing measurement invariance latent means between Austrian and Japanese students were compared. In the cultural group comparison model, the latent means of Japanese students were constrained to zero.

Latent variable modeling program Mplus 7 (Muthén & Muthén, 1998-2012) was used to estimate and test the model. Model fit was evaluated using Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). Bayesian information criterion (BIC) was used to compare competing models.

Results

Item means of difference scores

First, we checked item means of difference scores between Austrian and Japanese adolescents. As shown in Figure 1, the means of the absolute values of the seven difference scores between perceived class opinion and personal opinion were smaller in the Japanese sample compared with the Austrian sample. This is in line with our hypothesis assuming that Japanese adolescents show a smaller Self-Group Distinction compared with the Austrians.

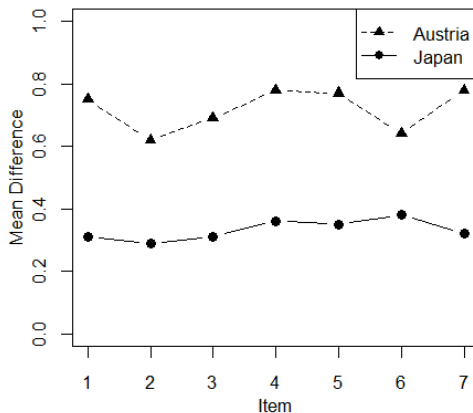


Figure 1:
Means of the Absolute Values of the Difference Scores

Measurement model

The Confirmatory Factor Analysis (CFA) model shown in Figure 2 was fitted for the Austrian ($\chi^2(14) = 12.93, p = .532; CFI = 1.0; TLI = 1.0; RMSEA = .001$) and the Japanese sample ($\chi^2(14) = 32.22, p < .01; CFI = .926; TLI = .890; RMSEA = .049$) separately. The results showed that the model fit was better in the Austrian sample than in the Japanese sample. Nevertheless, we continued testing for measurement invariance across these cultural groups. As shown in Table 2, the model assuming scalar invariance had the lowest BIC value and therefore the best trade-off between model fit and model complexity. Moreover, fit indices indicated an adequate fit according to CFI and TLI and a good fit according to RMSEA respectively.

The latent factor means were different between Austrian and Japanese adolescents ($\Delta M = 0.335, p < .001$). The positive values indicate that Austrian adolescents showed higher differences than Japanese adolescents, indicating higher levels of individualism in Austrian adolescents than in Japanese adolescents. This result is in line with our theoretical consideration, hence offers evidence for the validity of the instrument.

To rule out possible answering biases, we re-run all analyses using both a three point scale and dichotomous items. The substantial results did not change indicating that there were no answering biases present (for more details, see Yanagida, 2010).

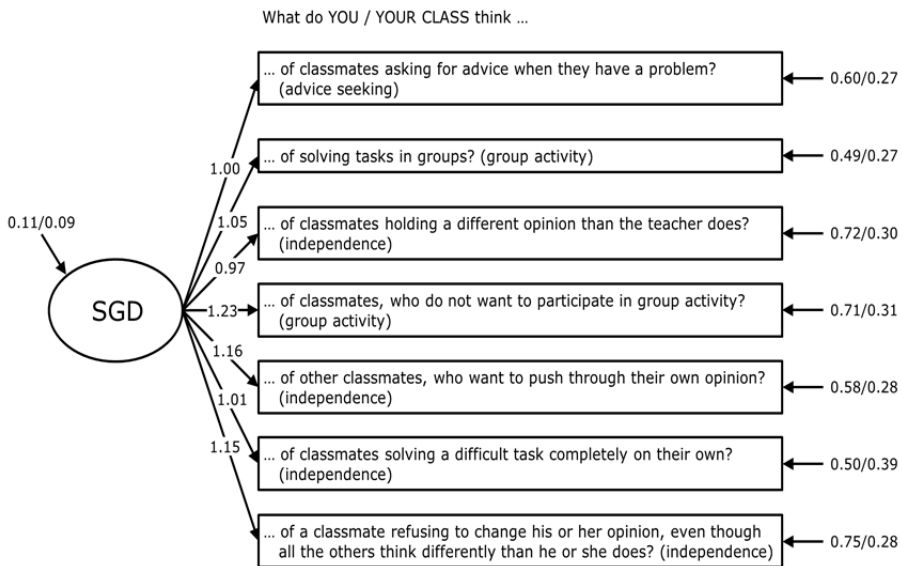


Figure 2: Factor structure of the *Self Group Distinction* (SGD) Scale. Unstandardized parameter estimates for Austrian/Japanese students

Table 2:
Test of measurement invariance of the Self Group Distinction (SGD) Scale.

	χ^2	<i>df</i>	<i>p</i>	CFI	TLI	RMSEA	BIC
configural invariance	49.616	28	<.01	0.941	0.911	0.044	11776
metric invariance	58.562	35	<.01	0.935	0.922	0.041	11748
scalar invariance	67.328	40	<.01	0.925	0.921	0.041	11727

Discussion

Based on a rather narrow definition of I/C we proposed a new approach to measure individualism and collectivism in adolescents. The I/C construct was characterized by the degree of an assumed convergence of an individual's opinion with an anchor group opinion. Consequently, we applied a measurement strategy which did not rely solely on an arbitrary selection of content domains but on difference scores based on items covering self and group opinion. Because our target group consisted of adolescents, we chose the class as the relevant anchor group. Seven items covering three content domains, namely *advice seeking*, *group activity*, and *independence* (Oysermann et al., 2002) were constructed and formulated for both the own and the class opinion. Thus, the new measurement resulted in 7 pairs of corresponding items.

First, we explored the mean level of the difference scores between self and group. Thus, for each pair of corresponding items we inspected the means of the absolute values of the differences between self and class separately for the Austrian and Japanese sample. In line with our theoretical considerations, there were smaller differences in any of the seven item pairs in Japanese adolescents compared with the Austrian adolescents. This is an important finding, because it supports our theoretical considerations regarding I/C and the definition of I/C as group orientation characterized by the degree of the assumed convergence of an individual's opinion with an anchor group opinion. Furthermore, we regard this result as important evidence for the validity of the newly developed measurement approach.

In a second step, we compared latent means after constraining factor form, factor loadings and intercepts across Japanese and Austrian adolescents via a multiple group CFA model. The constraint model showed good fit indicating strong measurement invariance (Chen, 2008). Thus, the newly developed *Self Group Distinction Scale* (SGD scale) validly measures I/C across Japanese and Austrian adolescents. In line with our theoretical considerations, the latent mean level of the Japanese adolescents was lower in comparison with the Austrian adolescents. This indicates that the distinction between self and group is smaller in Japanese adolescents compared with Austrian adolescents. This finding further illustrates the validity of the *Self Group Distinction Scale*.

Strengths and limitations

A need for a tighter operationalization of I/C has been claimed in the literature (Oyserman et al, 2002, p. 43), but new measurement approaches in this direction have rarely been developed. This study is the first that conceptualized I/C rather narrowly in terms of a Self-Group Distinction and applied an innovative measurement approach. Consequently, there are several limitations. *To begin with*, we did not explore associations between the *Self Group Distinction Scale* and other I/C measures. This would be important to gain a better understanding of several aspects of the I/C construct. However, such a comparison is only possible if both measures prove strong measurement invariance. Unfortunately, strong measurement invariance was only rarely demonstrated for I/C measures in the literature (Fischer, et al., 2009). In fact, we collected data with the Collectivism Scale (Yamaguchi, 1994) which however failed strong measurement invariance in our data (Yanagida, 2010). Therefore, we were not able to consider this scale in the current analyses. *Second*, we only used “class” as the anchor group to estimate the distinction between self and group opinion. It would be worthwhile to apply our approach to other relevant anchor groups as well, e.g. to family, friends, or peer groups outside school to be able to generalize our findings to different relational contexts. *Third*, we chose only one representative country for an individualistic and one representative for a collectivistic culture, namely Austria and Japan. Although these two representatives were chosen for a good reason, because both are considered to be vertically oriented (Triandis, 1995), it would be nice to examine the SGD scale in other individualistic and collectivistic countries as well. Overall, cross-validation of the SGD scale is needed.

In conclusion, the SGD scale based on our new measurement approach proved to be a promising new measure for the I/C construct which is worth further development.

Author note

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