

Measuring Self-Transcendence as a Form of Self in Japanese Undergraduate Students 日本人大学生における自己形成としての自己超越の測定

Alexander Krieg, Ph.D.¹

Yuri Nishikubo²

Abstract

Self-other relationship schemas influence a wide variety of cognitive and interpersonal affective processes. The current study explores the measurement properties of three common scales used to assess self-transcendence among Japanese students. In a sample of fifty-six students, we found that each of the three scales conformed to a unidimensional factor structure, had acceptable item reliability, and demonstrated discriminant validity towards other measures of self-other relationships. Two of the three measures demonstrated temporal sensitivity to change. We conclude that psychometric properties attained in this sample indicate that self-transcendence may be a separate but related construct to other types of self-other relations, and these three measures are adequate to measure self-transcendence in a Japanese student population.

概要

自己と他者との関係のスキーマは、認識と対人関係の感情的なプロセスに様々に影響する。この研究では、Self-transcendence（自己超越）を測定するのによく使用される3つの尺度の測定特性を日本人学生のサンプルにおいて調べた。56名の学生のサンプルにおいて、3つの尺度はそれぞれ一次元因子構造に準拠しており、各項目は十分な信頼性を保っていた。また、自己と他者の関係性についての他の尺度との弁別的妥当性も持っていた。3つの尺度のうち2つは、変化に対する一時的な敏感性を示した。今回のサンプルで得られた心理測定特性は、自己超越が他の種類の自己と他者関係とは別ではあるが、それに関連する構成要素である可能性を示しており、これら3つの尺度は日本人学生の自己超越を測定するのに十分であることを結論付けた。

Key words: Transcendence, Interconnection, Self-Construal, Unity, Mystical Experience

キーワード: 超越、相互関係、自己理解、統一、神秘体験

¹ Assistant Professor, Department of Global Communication, Kobe Gakuin University

² Undergraduate Student, Department of Global Communication, Kobe Gakuin University

1. Introduction and Literature Review

Our sense of self governs our interpersonal processes. We relate to others via what we believe about ourselves and those around us. One of the key ways people understand the relationship between themselves and social others is through a sense of interpersonal distance known as self-construal (Markus & Kitayama, 1991). Some people view themselves as emotionally close and overlapping with social others (e.g., interdependent self-construal), while others view themselves as more separate, independent, and unique (e.g., independent self-construal; Markus & Kitayama, 1991). In the extant literature, these boundaries between the self and others—either firm and separate or flexible and overlapping—are shown to influence visual perception (Gutchess, Welsh, Boduroglu, & Park, 2006), attention allocation (Krieg & Xu, 2018), and emotional distress such as depression (Su, Lee, & Oishi, 2012) or social anxiety (Krieg & Xu, 2015).

In the experience of self-transcendence, the view of the self as an identity weakens, and the boundaries constructed to manage our relationships with social others become less relevant. On one hand, the sense of self (ego integrity) is lost, but on the other hand, alienation from others is also lost. Within the framework of the Self-Construal Model, if independent self-construal is represented by firm, separate boundaries, and interdependent self-construal is represented by overlapping soft boundaries, self-transcendence would likely have no visible boundaries at all. To date, very little exploration has been done to theoretically map self-transcendence onto other types of self-construal. One key barrier has been the notorious challenge in measuring self-transcendence and transcendental experiences, especially among non-Western samples (Joshanloo, 2014).

1.1 Self-Transcendence

Self-Transcendence is a construct that is by definition rather nebulous with different researchers stressing different aspects. First popularized by Abraham Maslow (1971) as a state of being that was both distinct and beyond his notion of self-actualization and peak experiences, which were originally the highest levels in his Hierarchy of Needs. To Maslow, to transcend one's self means to transcend one's own needs, seeking a cause beyond the self, and pursuing the needs of something divine. Levenson, Aldwin, and Cupertino (2001) focused on a similar notion of transcending the self. They argued that doing so involves a developmental process leading to wisdom through flexible perspective-taking, and therefore is more often found in elderly populations. In addition, and essential to the current study, Levison and colleagues also emphasize the removal of rigid boundaries between the self and social others as a core component of self-transcendence.

Other views of self-transcendence are even more expansive. Both Cloninger and colleagues' (1993) self-transcendence and Piedmont's (1999) spiritual transcendence are not narrowly focused

conceptually, but include aspects such as the awareness of death, connectedness of all living things, a sense of unity and purpose in living. Cloninger et al. (1993) explicitly defined self-transcendence as referring to an experience of identification with the whole of existence, the feeling of being an integral part of all of nature, the universe, and cosmos. It involved a tendency to lose a sense of space and time in one's fascination with something, and to construe all things as part of one totality, where the sense of one's individual self is lost and no distinction exists between the self and others (Akyalcin, Greenway, & Milne, 2008).

1.2 Measuring Self-Transcendence

Given the wide array of constructs associated with self-transcendence, several complementary scales that stress different aspects of the experience have been constructed by various research groups. In this section, we will review the top three scales used extensively in humanistic, developmental, and personality psychology.

1.2.1 Mysticism Scale. The Mysticism Scale (MS; Hood, Jr. et al., 2001; Hood, 1975), is more narrowly focused on mystical experiences. This scale was inspired by the theoretical work of Stace (1960), who purported that the feeling of the unity with all things was the common core of all mystical experiences and does not necessarily relate directly to religious cultures. Hood (1975) and colleagues (Hood et al., 2001) further developed this core concept into the two experiential components of extrovertive and introvertive, as well as a component of interpretation. According to their research, the extrovertive component describes a unifying sense of oneness within all things; the introvertive component describes the experience of this oneness as a pure consciousness, outside the limits of space and time, a void in which the sense of self, sensations, thoughts, and images are lost (i.e., “ego death”).

Contrasting the experiential factors that happen in the moment of a transcendent experience, the interpretation occurs afterwards and in response to the mystical experience. This experience includes a sense of objectivity or reality, peace, and a feeling of being present in something divine (Stace, 1960). Despite the subjectivity, “interpretation” describes non-rational, intuitive, insightful experiences as a source of valid knowledge (Hood, 1975). Despite its frequent use, most studies do not report reliability and validity statistics of the Mysticism Scale. Concerningly, different studies have found different factor structures on this scale (Caird, 1988; Reinert & Stifler, 1993), casting doubt on its overall usefulness in empirical research projects.

1.2.2 Spiritual Transcendence Scale. The Spiritual Transcendence Scale created by Piedmont (1999) assesses the “transcendent perspective in which a person sees a fundamental unity underlying the diverse strivings of nature” (Piedmont, 1999, p.998). Because it attempts to access a more social emphasis on encountering the divine, the STS is purported to measure a purer form of

spirituality as it “provides a nonreligious conceptualization” (Kapusinski & Masters, 2010, p.202). The STS consists of three factors: ‘Universality’, ‘Prayer Fulfillment’, and ‘Connectedness.’ Universality is the belief in the unity and purpose of life; Prayer Fulfillment is a feeling of joy and contentment resulting from prayer or meditation; and Connectedness is a sense of personal responsibility and connection to others.

The psychometric properties of the STS have been examined in diverse samples (de Meezenbroek et al., 2012), and the measure has been shown to be associated with a number of health and well-being measures. However, there is still debate about whether the proposed three-factor structure is the best fit. Lace, Haeberlein, and Handal (2017) noted low item consistency scores and found evidence that a five-factor model had superior psychometric properties. Their factors included Prayer / Meditation Enjoyment, Universal Connectedness, Greater Purpose, Wholeness of Humanity, and Closeness to the Deceased. It is important to note that while the factor loadings and model fit indices were improved using a five-factor model, some factors contained only two items, which many psychometricians would find objectionable.

1.2.3 Temperament and Character Inventory—Self-Transcendence Subscale. The Self-Transcendence Subscale of the Temperament and Character Inventory (TCI-ST; Cloninger et al., 1993) represents the expansion of the TCI to include elements related to developmental, humanistic, and transpersonal approaches to human psychology. In addition to Self-Transcendence, the updated version of the TCI includes Persistence, Self-Directedness, Cooperativeness. The effort to incorporate self-transcendence within personality development is based on evidence drawn from genetic, neurological, developmental, pharmacological, psychometric sources founded on a psychobiological model with emphasis on behavioral learning (Cloninger et al., 1993).

In the TCI-ST, self transcendence refers to an experience of identification with the whole of existence, feeling of being an integral part of all nature and the entire universe. In particular it includes a tendency to lose one’s sense of space and time through curious fascination, and to view all things as part of one totality. As with the other scales loss of self or “ego death” are included in this conceptualization (Cloninger et al., 1993).

The TCI is a widely used clinical battery that has been used in countless studies in many countries on a wide variety of topics. The original version, as well as the multi-language versions stemming from it have good item consistency, test-retest reliability, and validity metrics associated with them (Akyalcin et al., 2008). Of particular interest to the current study, Tomita et al. (2000) conducted a thorough psychometric analysis on the Japanese language version on a non-clinical sample. The results showed excellent inter-item consistency for the TCI-ST, but found that a one-factor model fit the data better than the originally proposed three-factor model.

1.3 Current Study

The purpose of this study is to evaluate measurement options for the construct of self-transcendence among a Japanese population, specifically focusing on one's sense of self among social others. In addition to investigating standard psychometric properties, we aim to compare these measures to other measures of self-construal, and see which measures are sensitive to temporal change after an intervention. Sensitivity to manipulation is especially important to understanding one's sense of self among social others given that many factors that define our social relationships are fluid and change across situations and contexts.

2. Method

2.1 Participants and Procedure

Fifty-six first-year undergraduate students (54% female; M age = 18.18 [SD = .48]) completed an online survey implemented via the Qualtrics survey platform during a lecture given on a similar topic during and introductory seminar. Participants agreed to participate in the study by checking an "I agree" button on an informed consent form. Participants were instructed that their participation was entirely voluntary and they could discontinue the survey at any time. Pre-test measures were completed first, followed by participants watching an 8-minute animated video of "The Egg" (described below), and finally, they completed post-test measures immediately afterward. All 56 students who completed the pretest measures also completed the post-test measures. All measures retained their original Likert scales.

2.2 Measures and Materials

2.2.1 Mysticism Scale. The Mysticism Scale (MS; Hood, 1975; Hood, Ghorbani, et al., 2001), described in detail in the Introduction, did not have an existing Japanese translation. Therefore, the two authors, and one bilingual translator, completed the translation/back-translation method described by Brislin (1970). First, the English version of the scale was translated to Japanese by the second author. Then, the bilingual translator translated the newly created Japanese version back to English. Next, the first author examined the two English versions for similarities. Finally, a discussion by the translation team resolved any nuances in the Japanese version. Among our sample, the Mysticism Scale had a Chronbach's alpha score of .77, which is sufficiently similar internal consistency to the original version.

2.2.2 Spiritual Transcendence Scale. The Spiritual Transcendence Scale (STS; Piedmont, 1999) also did not have an existing Japanese translation. Given our interest is only related to sense of self, we focused on the Connectedness subscale. The same translation/back-translation methods were followed as with the MS and our sample's Chronbach's alpha score of .76 demonstrated

sufficiently similar internal consistency to the original version.

2.2.3 Temperament and Character Inventory—Self-Transcendence Subscale. The TCI-STS (Cloninger, Svrakic, & Przybeck, 1993) did have an existing Japanese version translated by Tomita et al. (2000). The Japanese version of this scale had similar reliability and validity metrics as the original. In the current sample, internal consistency (as measured by Chronbach’s alpha) was .87.

2.2.4 Independent and Interdependent Self-Construals. The 30-item Singelis Self-Construal Scale (SCS; Singelis, 1994) was used to examine independent (15 items) and interdependent self-construals (15 items) on a 7-point Likert scale (1 = Strongly disagree, 7 = Strongly agree). Evidence for construct validity included higher levels of interdependent self-construal and lower levels of independent self-construal reported by Asian Americans in comparison to European Americans (Singelis, 1994). The translated Japanese measure has been widely used and validated among multiple native Japanese samples (e.g., Kleinknecht, Dinnel, Kleinknecht, Hiruma, & Harada, 1997; Norasakkunkit & Uchida, 2011). In the current study, the Cronbach’s alphas for independent and interdependent self-construal were .76 and .75, respectively.

2.2.5 “The Egg” Video. “The Egg” (Weir, 2014) is a short story by American writer Andy Weir, and has been translated into over 30 languages (including Japanese). The story follows a nameless 48-year-old man who discovers, after he dies, that he will be reincarnated into every life, past and future, throughout the universe so he can mature enough to become a god. Essential to the idea of transcendence, the story begins with the man and the god figure speaking about the man and his relationship to others as if he was a separate individual entity. As the story progresses, however, the man learns that there are no “other people” and that every person he ever interacted with was just him reincarnated into that particular life. The story was written and designed to instill a sense of transcendental unity in its reader, making it directly relevant to the content of the measures examined in the current study. The particular video that students watched was created by Youtuber “Kurzgesagt.” Participants watched the video in English with Japanese subtitles of “The Egg’s” original text.

2.3 Analytic Strategy

2.3.1 Unified Factor Structure. Given that each of the three measures of interest were constructed to be unidimensional, we used confirmatory factor analysis (CFA) to investigate the unidimensionality of each scale. A CFA is a specific type of structural equation model that incorporates latent (e.g., derived) variables to ascertain the degree to which each question influences the construct of interest. If some questions have low “loadings” it is possible that they are measuring something different than the construct of interest, and the model subsequently would not fit well. Each item of each scale was loaded onto its own latent factor, and model fit indices

were compared with the Weighted Least Squares Means and Variance Adjusted (WLSMV) estimator. According to Hu and Bentler (1998) the recommended cutoff for the CFI and TLI is any value above .95. For the RMSEA and SRMR, the recombination is a value below the cutoff of .06 and .08, respectively.

2.3.2 Convergent and Discriminant Validity. In order to examine the degree to which the self-transcendence scales successfully measured a particular sense of unity through reduced saliency of self-other boundaries, we compared the correlation coefficients among the three self-transcendence scales with their correlations with independent and interdependent self-construal, which were designed to measure different aspects of self-other relations. If the sets of correlation coefficients were significantly different, evidence for convergent and discriminant validity will have been obtained.

2.3.3 Conduciveness to Manipulation. In order to examine whether measures of self-transcendence are sensitive to temporal change via manipulation, we will compare pre-video scores of each self-transcendence scale with post-video scores. Given that the structure of the data is nested (i.e., each participant has two scores that are not independent of each other), we will use a linear-mixed effect (LME) model with a random-intercept for each participant rather than a generalized linear model. LME models take into account correlated or grouped scores within a dataset. In this case pre-test and post-test scores from each participant would be uniquely related to one another in a way that is fundamentally different than pre-test or post-test scores from other participants. Significant increases in self-transcendence scales after manipulation would provide evidence for temporal sensitivity for these measures.

3 Results

3.1 Descriptive Statistics

Please see Table 1 for pre-test and post-test means and standard deviations for all variables.

Table 1 Means and standard deviations

	Pre-Video Scores		Post-Video Scores	
	Mean	Std. Dev.	Mean	Std. Dev.
TCI-STS	4.16	1.11	4.48	1.14
STS	3.94	1.17	4.24	1.13
MS	4.29	.94	4.29	1.09
IND	4.96	.66	5.01	.64
INT	4.63	.59	4.68	.63

NOTE: IND = Independent Self-Construal; INT = Interdependent Self-Construal; MS = Mysticism Scale; STS = Spiritual Transcendence Scale; TCI-STS = Trait-Character Inventory, Self-Transcendence Subscale.

3.2 Unidimensional Factor Structure

The MS (CFI = 1.000; TLI = 1.001; RMSEA = .014; SRMR = .047), STS (CFI = 1.000; TLI = 1.012; RMSEA = .000; SRMR = .039), and TCI-STS (CFI = 1.000; TLI = 1.022; RMSEA = .000; SRMR = .052) all demonstrated good model fit when all items were directed to load on a single factor. Likewise, all factor loadings were statistically significant. Given sufficient goodness-of-fit (CFI and TLI scores) and no evidence of “badness of fit” (RMSEA and SRMR scores) on any of the measures, it is likely that a unidimensional factor structure represents each measure the best.

3.3 Convergent and Discriminant Validity

Pearson’s biserial correlation coefficients were calculated among all pre-test variables (see Table 2 for the correlation matrix). Then correlations were compared using Fisher’s r/z transformation. For the TCI-STS, the correlation with the STS was higher than both IND ($z = 3.64$; $p < .001$) and INT ($z = 3.55$; $p < .001$), and its correlation with MS was also higher than both IND ($z = 3.04$; $p < .001$) and INT ($z = 9.95$; $p < .001$). The correlation between STS and MS was also higher than the correlation with IND ($z = 3.04$; $p < .001$) and INT ($z = 9.95$; $p < .001$). The general pattern of results shows that measures of self-transcendence converged and differentiated significantly from other types of self-other relationships.

Table 2 Correlation matrix of all variables

	IND	INT	MS	STS	TCI-STS
IND	1.00	.44	.52	.32	.41
INT	.44	1.00	.37	.51	.42
MS	.52	.37	1.00	.61	.69
STS	.32	.51	.61	1.00	.73
TCI-STS	.41	.42	.69	.73	1.00

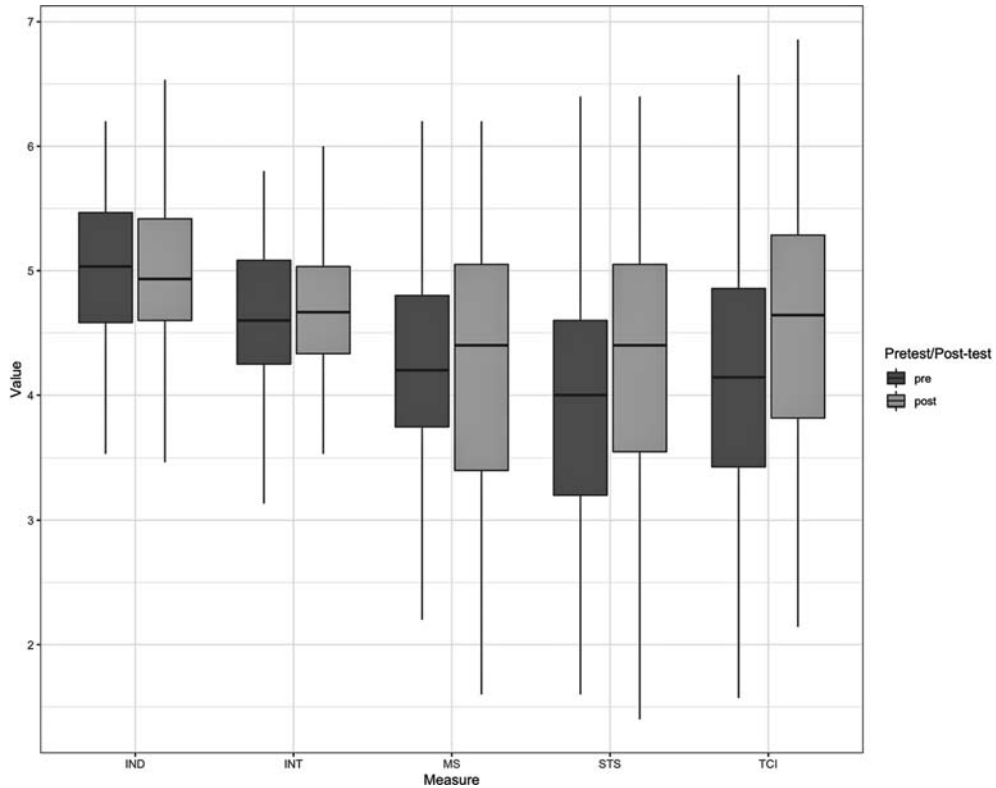
NOTE : IND = Independent Self-Construal; INT = Interdependent Self-Construal; MS = Mysticism Scale; STS = Spiritual Transcendence Scale; TCI-STS = Trait-Character Inventory, Self Transcendence Subscale. All correlations statistically significant at $p < .001$.

3.4 Temporal Sensitivity to Manipulation

A series of five linear mixed-effects models were used to examine the efficacy of the intervention. Our results showed that while the video intervention was reliably correlated with higher post-test scores of the TCI-STS ($B = .23$, $t = 3.45$, $p = .001$, *Hedges g* = .46) and STS ($B = .21$, $t = 3.15$, $p = .002$, *Hedges g* = .42), the same pattern was not found for the MS ($B = .00$, $t = .03$, $p = .97$, *Hedges g* = .00). Likewise, no significant change between pretest and post-test scores for IND ($B = .04$, $t = 1.01$, $p = .317$, *Hedges g* = .14) or INT ($B = .036$, $t = 1.07$, $p = .285$, *Hedges g*

= .14) were found. Please see Figure 1 for a depiction of the pretest/post-test changes across variables.

Figure 1 Pre/post change in self-other relations



4 Discussion

The purpose of this study is to evaluate measurement options for the construct of self-transcendence among a Japanese population, specifically focusing on one's sense of self among social others. Specifically, we examined the unidimensionality, convergent/divergent construct validity, and temporal sensitivity to intervention among three commonly used measures of self-transcendence. Our results found that each scale/subscale functioned as a unidimensional factor structure, and that all self-transcendence measures were statistically correlated with one another, and that these correlations were significantly different than the correlations with measures that assess different types of self/other relationships (e.g., independent and interdependent self-construal). Among the three measures, the STS and TCI-STS had the strongest correlation, suggesting that they tap into a more prototypical understanding of the construct of self-transcendence than the MS. Likewise, it was only the TCI-STS and STS that demonstrated

statistically significant change before and after the video intervention.

No study is free from limitations, and our results were likely impacted by sample characteristics and design issues, warranting a cautious interpretation. Specifically, our sample consisted entirely of students and was underpowered due to lack of sample size. The sample characteristics mean that our results might not generalize to older Japanese populations or Japanese populations with differing educational or socioeconomic background. Likewise, the video intervention had only a single condition that all participants completed at the same time. Multiple conditions and sample randomization would be necessary to determine whether it was the video intervention that had an impact on self-transcendence scores or whether it was a result of unknown factors.

Limitations notwithstanding, these results indicated that self-transcendence can be measured effectively among Japanese participants. Importantly, the psychometric properties attained in this sample indicate that self-transcendence may be a separate but related construct to other types of self-other relations, such as independent and interdependent self-construal. It is hoped that these findings may encourage future research on self-transcendence as a possible subtype of self-construal at least among Japanese participants. For future studies looking to use one of these measures to assess self-transcendence, our results would indicate that the TCI-STS and the STS are likely to be more prototypical and have better temporal sensitivity than the MS.

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