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Dear Dr. Shapiro

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Hello! My name is Sung Hyun Park, a faculty in Seoul University of Buddhism. I contacted you quite a while ago in order to ask your permission to develop Korean version of Shapiro Control Inventory (SCI). I am sorry that it took so long to get back to you.

Today, I would like to report the progress I made in Korea regarding my study about Korean version of SCI. In addition, I would like to discuss few things with you about future collaboration.

Here is a brief description of the progress I have made so far. First of all, I conducted the study of Korean version of SCI with my colleague, Dr. Seoung yun Sung. The article was published on Journal of Korean Psychological Association: Society & Personality in 2008. I tried to summarize the study procedure and findings below.

## 1. Selection of the item translation

My colleague and I selected total 75 items from 187 items of the original SCI which include 26 items from Sense of Control (positive sense of control and negative sense of control) and 49 items from Mode of Control (positive assertive, negative assertive, positive yield, and negative yield).

#### 2. Translation

The selected SCI items were translated with a process of translation and backtranslation by persons fluent in both Korean and English. English native speaker compared the translated items with original SCI items. Minor modifications on the item translation were made in the present study in order to improve its readability among Korean.

# 3. Factor Analysis and Psychometric Evaluations

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- For Exploratory Factor Analysis, we recruited 313 college students (Male/Female= 113/200, Age (M= 21.45, Range=18~29)).
- 45 graduate students participated (Male/Female= 11/34, Age (M= 32)) in SCI item evaluation.
- For Confirmatory Factor Analysis, 201 college students participated (Male= 89, Age (M=21.03).

#### 4. Results

## 4-1. Factor Analysis

A principal components analysis with a varimax rotation was performed on the data to explore the possible structure of the SCI with Korean participants. The three-factor model with positive sense of control, negative sense of control, and desire for control seemed to be the best which was consistent with the original SCI model. Confirmatory factor analysis was conducted and resulted in TLI=.972, CFI= .976, RMSEA= .081 which supported the three-factor model

However, few items such as "3, 29, 11," were loaded differently from the original three\_factor model. Therefore, these three items\_were excluded from Korean version of SCI in order to prevent any negative effect on the psychometric evaluation for Korean version of SCI.

Table 4-1

Item	SCI	Korean version of SCI
Item 3. "I make a great deal of effort in order to try to stay in control of my life."	desire for control	positive sense of control
Item 29. "I feel that I am losing control in areas where I once had control."	negative sense of control	desire for control
Item 11. I am able to calmly accept that which I am not able to change or alter."	positive sense of control	positive sense of control but

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	factor loading is
	low

**Table 4-1-1** 

Sub factor	SCI	Korean version of SCI
positive sense of control	11 items	10 items
negative sense of control	11 items	10 items
desire for control	5 items	4 items

#### 4-2. Mode of Control

Exploratory factor analysis was conducted with 49 items on Mode of Control. The result indicated that items on positive assertive mode and items on negative assertive mode were mostly same as the original SCI. However, negative assertive mode items and negative yielding items showed mixed loading patterns.

I wanted to investigate the possibility that these mixed loading patterns might be caused by cultural difference in term of the way Korean people comprehend words on Mode of control items. 45 graduate students were recruited to evaluate SCI items. They were asked to categorize each item into two levels (positive-negative, or assertive-yielding). The result showed that item evaluation on positive-negative was consistent with the original SCI. However, the item evaluation on assertive-yielding was somewhat different from the original SCI. Table 4-2 shows those items which were evaluated differently from the original SCI.

Results from item evaluation and factor analysis indicate that cultural difference of understanding "assertive-yielding" led different loading patterns on Korean version of SCI.

Negative assertive mode factor did not show significance when exploratory factor analysis was conducted after eliminating those ten items. Therefore, positive items and negative items were analyzed separately in order to follow the original SCI factor structure.

Table.4-2

items	SCI	Korean version of SCI	
Item 2. rational	+assertive	+yielding	
Item 22. making contact	+assertive	+yielding	D-36 Er
Item 40. responsible	+assertive	+neutral	ox
Item 41. impulsive	-assertive	-neutral	- Ant
Item 48. attentive	+assertive	+yielding	
Item 1. impatient	-assertive	-yielding	
Item 9. reluctant to change	-assertive	-neutral	
Item 14. defensive	-assertive	-neutral	The state of the s
Item 23. tense	-assertive	-yielding	
Item 45. withholding	-assertive	-neutral	-

# 4-2-1. Factor analysis for Mode of Control-Positive items

Two factors (named respectively as positive assertive mode and positive yielding mode) were loaded. However, few items were loaded differently compared with the original SCI study.

Item 48 ("attentive") and item 8 ("sensitive") were deleted from Korean version due to low factor loadings (less than .30) For example, item 49 ("open") was included as positive yielding mode in the original SCI. However, it was included as positive assertive mode in Korean version of SCI. Since "open" contains the meaning of willingness and aggressiveness in Korea, we decided to keep item 49 in positive assertive mode.

**Table 4-2-1** 

sub factor	SCI	Korean version of SCI
positive assertive mode	16 items	16 items

positive yielding mode	14 items	12 items

# 4-2-2. Factor analysis for Mode of Control-Negative items

The factor structure for negative yielding mode was loaded differently from the original SCI factor structure. For example, items 14, 23, 45, 9, and 19 were included as negative yielding mode in Korean version whereas those items were included as negative assertive mode in the original SCI study. First four items (items 14, 23, 45, & 9) were reported as neutral items from "assertive-yielding" item evaluation. Therefore, we decided to keep them as negative yielding mode. Interestingly, item 19 reflects significant cultural difference on control. The "control" construct in Asian culture is often understood by Asian people as control for self and intrapersonal rather than operation and changes toward external environment. Therefore, item 19 was deleted in order to prevent any misunderstanding.

In addition, Items 6, 1, and 41 were deleted due to the low factor loadings.

**Table 4-2-2** 

sub factor	SCI	Korean version of SCI
negative assertive mode	13 items	6 items
negative yielding mode	5 items	8 items

## 4-2-3. Confirmatory Factor analysis on Mode of Control.

Based on the result from exploratory factor analysis, four-factor model showed an acceptable fit which resulted in TLI= .919, CFI= .927, and RMSEA = .081).

## 5. Validity Analysis

Locus of Control Scale, Mindfulness Scale, Acceptance and Action Questionnaire, Stress Coping Scale, SCL-90-R, Subjective Well-being Scale, and Psychological Well-being Scale (Above all scales are Korean versions.) were used for validity analysis. Overall, results from convergent

validity, concurrent validity, and incremental validity analyses provided convincing evidences for the validity of the Korean version of SCI.

However, correlations between positive yielding factor and Mindfulness Scale and Psychological Well-Being Scale were not statistically significant. This result did not support the hypothesis. It is necessary to investigate more about the "yielding" construct. In addition, the future study will need to identify underlying mechanism of relationship between positive yielding and health.

# 6. Discussion

I think this study captures very interesting cultural differences between Western and Asian cultures in terms of understanding the "control" construct. Especially, the cultural difference of understanding the term "yielding" led different loading patterns on Korean version of SCI, compared with the original SCI and as a result, few items were eliminated from Korean version of SCI. I think it will be very important to investigate the "yielding" construct more because "yielding" seems to imply many different meanings in Asian culture compared with other modes of control. This study implies that there is a great need for cross-cultural study on "control". Therefore, I would like to conduct the further study based on the findings from this study. I wonder if you are interested in conducting cross-cultural study with me about cultural perspectives on SCI items between Korea and US. It will be a great honor for me if I have the opportunity to work with you.