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Validation of the Proximity of Clothing to Self Scale for Older Persons

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의복의 자아 근접성 척도 검증
-노년층을 대상으로-

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Abstract

Sontag and Lee (2004) recently developed an objectively measurable instrument, the Proximity of Clothing to Self (PCS) Scale, which measured the psychological closeness of clothing to self. They validated a 4-factor, 24-item PCS Scale for use with adolescents and identified the need for confirmation of the factor structure with other age groups. This paper extends the work of Sontag and Lee by employing the PCS Scale with older persons, age 65 and over, and reports the validation of a 3-factor, 19-item PCS Scale for older persons. A mail survey was sent to a national random sample of 1,700 older persons by means of a list purchased from a U. S. survey sampling company in late November 2004. Total usuable number of respondents was 250 with an adjusted response rate of 15.6 percent. Three analytical rounds of confirmatory factor analysis(CFA) to test the construct validity of the PCS Scale were conducted by using AMOS 5.0(Analysis of Moment Structures), one of several structural equation modeling(SEM) programs. Completion of three rounds of the CFA resulted in a 3-factor, 19-item PCS Scale with demonstrated construct validity and reliability for older persons. The three PCS dimensions are clothing in relation to 1) self as structure-process(PCS Dimension 1-2-3 combined), 2) self-esteem-evaluative and affective processes(PCS Dimension 4-5 combined), and 3) body image and body cathexis(PCS Dimension 6). The initially hypothesized 6-factor scale(Sontag & Lee, 2004) was not confirmed for adolescents in their study nor with older persons in this study. In addition, the 4-factor solution for the adolescent group did not hold for older persons. It appears that the self-system of older persons is more integrated than may be true for younger individuals. Recommendations for future testing of construct validity of the PCS Scale are made.

Key words: Proximity of clothing to self, Older persons, Confirmatory factor analysis, Measurement validation; 의복의 자아 근접성, 노년층, 신뢰도분석, 척도 검증

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I. Introduction

The extent of influence of clothing on perceived quality of life varies among individuals. A multi-dimensional concept, proximity of clothing to self (PCS), was defined and an indicator of it was developed within the context of quality of life theory building and assess-ment(Sontag, 1978). In Sontag's study, the more a person felt psychologically close to clothing, the more his or her quality of life tended to be affected by his or her feelings about clothing. This suggests that if individuals feel or think that clothing is not relevant to how they perceive themselves, their perceived quality of life may not be greatly influenced by satisfaction or dissatisfaction with qualitative or quantitative conditions of their clothing(Slocum, 1981).

Basic research involving definition and clarification of meaning, scale construction, and measurement of significant concepts is vital to the advancement of theory development and testing within the human ecological paradigm; however, limited effort has been given to develop valid and reliable measure-ments in the area of the social science of clothing. Although instruments are being developed in this field, few have been recognized, adopted, and used in other scholarly fields of study. One aim for this research is to continue refining the Proximity of Clothing to Self(PCS) Scale that the previous resear-chers have initiated and extend and introduce this useful concept to other fields such as gerontology, social psychology, human development, social work, and so on.

1. Literature Review

In a recent study, Sontag and Lee(2004) developed an objectively measurable instrument, the PCS Scale, constructed from statements derived from open-ended responses pertaining to the PCS concept obtained from people across the life span. They proposed six PCS dimensions including clothing in relation to: (1) self as structure; (2) self as process I-communication of self to others; (3) self as process II-response to judgments of others; (4) self-esteem-evaluative process dominant; (5) self-esteem-affective process dominant; and (6) body image and body cathexis. Fuller descriptions of the dimensions of PCS comprising the concept were reported in their study.

According to Lee(1997) and Sontag and Lee(2004) studies, the PCS dimensions were based on classical social psychological theories of self, especially those of James(1890), Cooley(1902), Mead(1967), Rogers (1951), Rosenberg(1979), and Stone(1962). Several clothing scientists built on the work of social psychologists, relating clothing to various aspects of the self(Buckley & Roach, 1974; Creekmore, 1974; Dickey, 1967; Roach & Eicher, 1973). A thorough review of empirical studies related to each of the six PCS dimensions may be found in Lee(1997). A few are summarized below. Stone(1962) identified appearance as one way in which meaning is established in social transactions by communicating the self to others through non-verbal symbols such as clothing, grooming, and gestures. Reed(1973) found that wearers of different clothing styles could be differentiated by identity, value, attitude, mood, and personality with many variables related to self-concept.

Various clothing uses have been found to be related to self-esteem(Creekmore, 1974; Kwon, 1994). When feeling good about their clothing, wearers perceived themselves as more competent in work, more sociable, and more positive. Shim et al.(1991) found that men with low body cathexis, but positive clothing attitudes, use clothing to compensate for dissatisfaction with their body. In general, correla-tions between self-esteem and clothing use and between body satisfaction and clothing use were found.

The context of the above theoretical and empirical background, together with responses to the open-ended question, *Why do you feel as you do about your clothing?*, led to development of the original 3-point PCS Scale(Sontag, 1978). Sontag and Schlater (1982) reported the limitations of the 3-point rating scale and recommended development of items using an appropriate response scale. Subsequently, Vreeman (1985), Lynn(1990), and Schmerbauch(1993) constructed items to convert the PCS Scale to a more readily analyzable Likert-type format. Vreeman found differences in apparel involvement between persons with low and high levels of PCS. Lynn and Schmer-

bauch found that various age groups possess different degrees of psychological closeness of clothing to self, perhaps due to differences in developmental stage. Overall PCS Scale reliability equaled or closely approached .90 in both Lynn's and Schmerbauch's studies; however, reliability was considerably lower for the majority of individual PCS dimensions in both studies(Lee, 1997).

Because PCS has been useful in explaining a variety of personal and clothing variables, Sontag and Lee(2004) put their effort to develop an objectively measurable instrument, the PCS Scale, validated a 4-factor, 24-item PCS Scale for use with adolescents. They identified the need for confirmation of the factor structure with other age groups.

2. Research Objectives

Since there is evidence that the PCS concept has utility and importance for more than one age group, development of a PCS Scale that would be valid and reliable for use across the life span is highly desirable in order to show change in PCS with human development. Developing a PCS Scale effective for studying the change in the importance of clothing to self-image, self-esteem, body image, and body cathexis as people make transitions in space and time will allow for comparative and longitudinal studies and contribute to greater, in-depth understanding of clothing to self. Therefore, the objective of this research is to refine a standardized, valid, and reliable measurement instrument of PCS for use with older persons.

II. Research Methods

Mail survey design was applied in this study and followed the guidelines of Salant and Dillman's (1994) total design method throughout the data collection.

1. Research Population and Sample Characteristics

The population for this study was older persons, males and females age 65 and above who lived in non-institutional settings in the United States. A national random sample list of 1,700 older persons living at home, stratified by sex, age 65 and over was purchased from Survey Sampling International(SSI) in Fairfield, Connecticut in November 2004. The SSI population database was compiled from telephone directories, drivers' licenses, and others. The number of men and women in the sample was proportional to their representation in the U. S. population as reported in the 2000 Census of Population(U. S. Bureau of the Census, 2003): 43 percent male(N_M=731) and 57 percent female(N_F=969).

Survey respondents were from 45 states among the 50 states in the United States plus the District of Columbia. Their age range was from 65 to 94 years old with a mean age of 76. Eighty-five percent had an education level of high school completion and over. Median income range was from $20,000 to $27,499. Most respondents were white(91%) and lived alone(49%) or with a spouse(40%). Over 80% of the respondents were retired but among those, around 26% were involved in other activities such as another full-time or part-time job or volunteer work.

Overall, the demographic characteristics of the respondents were consistent with that of the U. S. elderly population in terms of the proportion by sex and age. However, it is important to be conscious of the fact that the respondents were mostly from the White ethnic group, had higher education, and were in higher income ranges compared with that of the U. S. elderly population.

2. Survey Instrument and Procedures

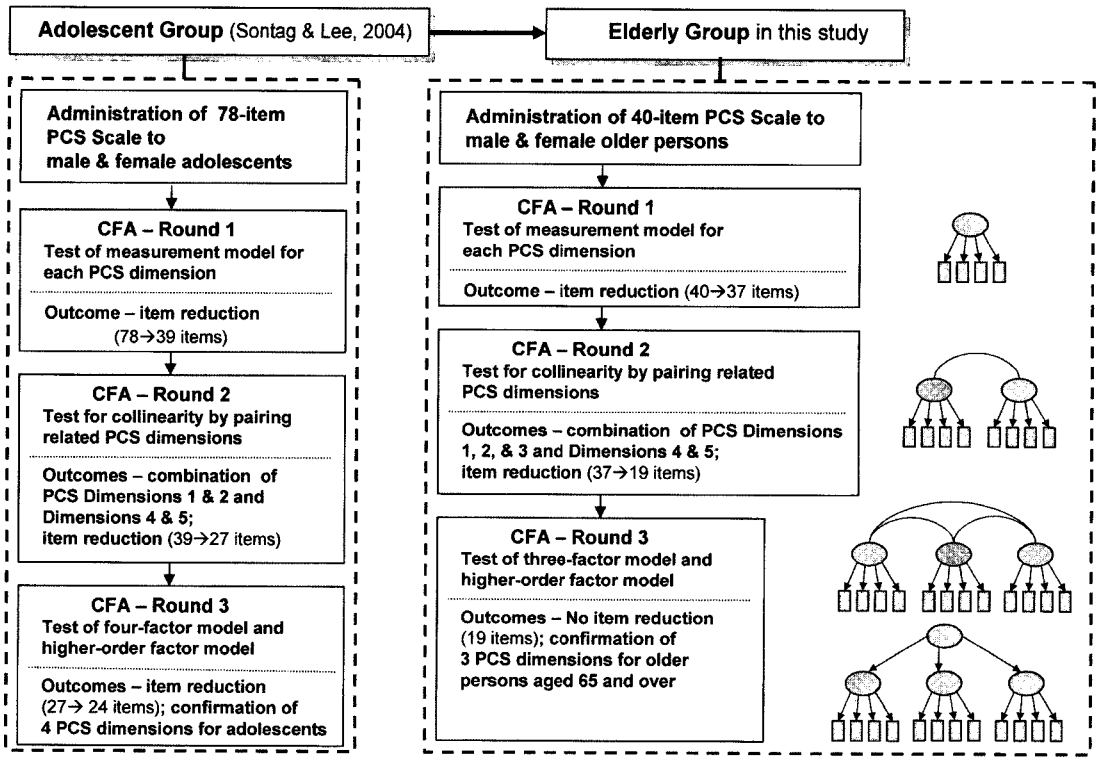
The PCS Scale was included in a questionnaire titled, *Clothing: A Resource for Successful Aging?* (Lee, 2005). In accord with the recommendations of Sontag and Lee(2004), forty statements reflective of the original six PCS dimensions were used to measure the level of PCS. In addition to the set of 39 items that Sontag and Lee retained at the conclusion of the first round single factor analysis of each PCS dimension, we added one item with alternative wording, *What I wear is who I am* for the original item(variable PCSD105), *What I wear is consistent*

with who I am, as Sontag and Lee recommended, bringing the total number of statements to forty. The 6-point Likert type response scale for measuring PCS was used: 1=*Never or almost never true of me*, 2=*Usually not true of me*, 3=*Sometimes true of me*, 4=*Often true of me*, 5=*Usually true of me*, and 6=*Always or almost always true of me*. High scores represent high PCS; low scores represent low PCS.

Following a pretest of the questionnaire with 15 older persons, a mail survey was conducted by sending to the national random sample of 1,700 older persons along with a cover letter explaining the purpose of the study and informed consent procedures, the questionnaire, a lottery card for a monetary prize drawing as an incentive to participate, and a business reply envelope in late November, 2004. The deliverable sample was 1,627. Three weeks following the first mailing, a follow-up postcard was sent to all non-respondents. As a result of the first mailing 198 older persons(12.7 percent of the deliverable surveys) returned completed questionnaires.

To increase response rate, a second mailing was sent six weeks after the first mailing in mid January, 2005 to 600 older persons, stratified by sex(258 males and 342 females), randomly selected from the 1,429 remaining available sample list using a random numbers table(Raj, 1972). Because of budget constraints it was not feasible to mail a question-naire to the entire remaining sample of non-respondents. Within two weeks, another 55 older persons completed and returned the questionnaire bringing the total number of respondents to 253 with a combined adjusted response rate of 15.6 percent. The lower than expected response rate might be attributed to the conduct of the survey over a holiday season and a lengthy survey instrument.

Of the 253 respondents, three were dropped from the confirmatory factor analysis(CFA) of the PCS



Note. The number of rectangles in the schematic diagram is not necessarily representative of the number of observed variables.

Fig. 1. Comparision of confirmatory factor analysis procedure between adolescent and elderly groups.

Scale because of missing data on some PCS items. Listwise deletion is the preferred mode of handling missing data when using multiple rounds of CFA. Thus, the sample size was 250.

3. Data Analysis Procedures

Three analytical rounds of CFA similar to those conducted by Sontag and Lee(2004) to test the construct validity of the PCS Scale with adolescents were conducted in this study with older persons by using AMOS 5.0(Analysis of Moment Structures), one of several structural equation modeling(SEM) programs. The measurement model was tested separately for each of six factors in round one. In round two, a factor model for factors taken two at a time for those that theoretically were expected to correlate substantially was tested. Finally, in round three a full factor measurement model for correlations among factors was tested, and a higher-order factor model was tested to examine the relationship between PCS (second-order factor) and each of the PCS dimensions(first-order factors). <Fig. 1> presents the comparison of the CFA procedure for analysis of the dimensional structure of the PCS Scale between Sontag and Lee's 2004 research on an adolescent group and this research on an elderly group.

III. Results and Discussion

1. The SEM Approach to Confirmatory Factor Analysis

The researcher carefully examined the normality of the forty items of the PCS Scale. Mardia's test for multivariate kurtosis was used in this study(Arbuckle & Wothke, 1999; Mardia & Foster, 1983). The data violated the distributional assumption of multivariate normality. Therefore, to correct for this, bootstrapping was used to obtain a corrected value of the probability, i.e., the Bollen-Stine bootstrapped *p*(Bollen & Stine, 1993) for the fitting function statistic, the discrepancy function. The researcher also compared the results of various estimators such as the asymptotically distribution-free(ADF), maximum likelihood(ML), generalized least square(GLS), and unweighted least squares(ULS) to identify appropriate estimators along with an application of bootstrapping to correct for non-normality.

In the elderly group, multivariate kurtosis did not increase significantly for each round of CFA. Thus, both ML and ULS were appropriate estimators to use. Results from the ULS estimation method using bootstrapping are reported here to be consistent with Sontag and Lee's 2004 study.

Table 1. Goodness of fit indexes for six PCS dimensions with items retained at conclusion of Round 1 confirmatory factor analysis

Dimension	Discrepancy Function	*p*	GFI	AGFI	NFI
Dimension 1: Clothing in Relation to Self as Structure (6 items; *df*=9)	12.824	.002	.996	.991	.994
Dimension 2: Clothing in Relation to Self as Process-Communication of Self to others (7 items; *df*=14)	16.363	.001	.996	.992	.994
Dimension 3: Clothing in Relation to Self as Process-Response to Judgments of Others (4 items; *df*=2)	3.400	.011	.998	.988	.995
Dimension 4: Clothing in Relation to Self-esteem-Evaluative Process Dominant (8 items; *df*=20)	27.011	.002	.997	.994	.995
Dimension 5: Clothing in Relation to Self-esteem-Affective Process Dominant (7 items; *df*=14)	12.250	.008	.997	.995	.996
Dimension 6: Clothing in Relation to Body Image and Body Cathexis (5 items; *df*=5)	10.433	.012	.996	.989	.992

Note. N=250. Discrepancy function is a measure of overall model fit using the unweighted least squares estimator, F_{ULS}; *p*=BollenStine bootstrapped *p*.

2. CFA Round 1: Single Factor Analysis of Each PCS Dimension

The objective for Round 1 was to arrive at a reduced and best set of observed variables for each of the six dimensions of PCS. Thirty seven of the forty items were retained at the conclusion of the Round 1. Decisions to delete the three items were made on the basis of the size of the standardized factor loading (<.60) and standardized residual covariances(R^2) (>2.58). <Table 1> reports the overall model fit and goodness of fit indexes.

Although the overall model fit did not achieve the nonsignificant test result of the null hypothesis for each dimension, the goodness of fit indexes were excellent [goodness of fit index(GFI), adjusted goodness of fit index(AGFI), and normed fit index (NFI)=>.95]. All factor loadings were significantly greater than zero; standardized factor loadings ranged from .61 to .88 and R^2 from .37 to .78.

Of the two similar items in PCS Dimension 1, that is, PCSD105 *What I wear is consistent with who I am* and PCSD1_40 *What I wear is who I am*, the original former expression performed better than the latter and was retained while the latter was deleted. The other two items deleted were PCSD603 *I look best in my clothing when I'm at the right weight for me* and PCSD613 *When I buy clothing that looks good on me, I feel satisfied with my body.* Both of these items were from PCS Dimension 6 *Clothing in Relation to Body Image and Body Cathexis*; this may reflect an older person's inability to maintain "right weight" or be satisfied with the aging body.

3. CFA Round 2: Theoretical Pairing

The objective for Round 2 was to examine the degree of collinearity that might exist between certain related pairs of dimensions and to eliminate any items that cross-loaded on dimensions other than that for which they were designed. As in the original study by Sontag and Lee(2004), PCS Dimensions 1 and 2 had a high degree of collinearity(correlation =.97). After combining these dimensions as per the methods used in the Sontag and Lee study, a set of seven items was retained in this combined dimension resulting in a nonsignificant discrepancy function.

However, when the above combined PCS Dimension 1 and 2 was paired with PCS Dimension 3, again a high degree of collinearity between the factors(correlation=.88) was obtained. This was not true in the Sontag and Lee(2004) study. Given these results, PCS Dimensions 1, 2, and 3 were combined into a single factor which we have named *Clothing in Relation to Self as Structure-Process*. To determine the best set of variables to measure this combined dimension, we began with a single factor CFA using a full set of 17 variables(the original 6 items from PCS Dimension 1, 7 items from PCS Dimension 2, and 4 items from PCS Dimension 3). Using elimination criteria previously specified for Round 1, a set of seven variables were retained(PCSD108, PCSD111, PCSD 207, PCSD208, PCSD212, PCSD302, and PCSD313). The top half of <Table 2> shows the model fit indexes for the combined PCS Dimension 1-2-3. This combined dimension achieved excellent fit as indicated by the nonsignificant value for the discrepancy function and the values of the other fit indexes,

Table 2. Goodness of fit indexes for selected paired and combined PCS dimensions at conclusion of Round 2 confirmatory factor analysis

Dimensions	Discrepancy Function	*p*	GFI	AGFI	NFI
PSC DIM 1-2-3: Clothing in Relation to Self as Structure-Process (7 items; *df*=14)	21.803	.079	.998	.996	.997
PSC DIM 4-5: Clothing in Relation to Self-esteem-Evaluative and Affective Processes (7 items; *df*=14)	11.705	.183	.999	.998	.999

Note. N=250. Discrepancy function is a measure of overall model fit using the unweighted least squares estimator, F_{ULS}; *p*=BollenStine bootstrapped *p*.

Table 3. Goodness of fit indexes for first- and second-order confirmatory factor analyses at conclusion of Round 3 test of full model

Dimensions	Discrepancy Function	*p*	GFI	AGFI	NFI
First-order CFA-Full Model: 19 items (*df*= 149)	238.932	.001	.994	.992	.993
Second-order CFA-Full Model: 19 items (*df*= 149)	239.769	.001	.994	.992	.993

Note. N=250. Discrepancy function is a measure of overall model fit using the unweighted least squares estimator, F_{ULS} *p*=Bollen-Stine bootstrapped *p*.

very high for GFI, AGFI, and NFI. Standardized factor loadings ranged from .68 to .85 and R^2 from .46 to .72.

Although Sontag and Lee(2004) theorized that all three dimensions might remain separate for older persons as development progresses, the opposite seems to be the case. As a person ages, the distinction between self as structure and process actually appears to become more integrated in one's perceptions. So although people's verbal statements across all age groups suggest a distinction among clothing in relation to self as structure and the two aspects of process, in older persons's cognitive structures, they tend to operate as one integrated or holistic function. This is similar, although not completely analogous, to the physicists' distinction between conceptualizing light as a particle(photon) or as a wave function. As people, however, perceive light, they do not see particles or waves but one phenomenon, light.

The pairing of the two *Clothing in Relation to Self-esteem* dimensions 4 and 5 resulted in a correlation between the two latent variables of .98, implying that older persons do not discriminate perceptually between evaluative and affective processes of self-esteem. This result is consistent with the findings for the Sontag and Lee(2004) study of adolescents. Thus, in a similar manner described above for combining dimensions, a set of seven items were retained(PCSD402, PCSD403, PCSD406, PCSD409, PCSD506, PCSD507, and PCSD511). As shown in the lower half of <Table 2>, a nonsignificant discrepancy function was obtained and other fit indexes were greater than .99. Standardized factor loadings ranged from .76 to .89 and R^2 from .57 to .79.

Thus, as input to the full model tests described below, there were a total of 19 observed variables retained as a result of Round 2. In terms of the factor structure, Round 2 led the researchers to combine PCS Dimensions 1, 2, and 3 into a single dimension named *Clothing in Relation to Self as Structure-Process* and PCS Dimensions 4 and 5 into a single dimension named *Clothing in Relation to Self-esteem-Evaluative and Affective Processes*. PCS Dimension 6 was not paired in this round and therefore entered as a single dimension, *Clothing in Relation to Body Image and Body Cathexis*.

4. CFA Round 3: Full Model Tests

The objective for Round 3 was to assess the fit of the full 3-factor model and confirm that a higher-order factor accounts for correlations among the three factors. Test results for the 3-factor, first-order measurement model with 19 observed variables(PCS items) are reported in the top half of <Table 3>. For the first-order measurement model, standardized factor loadings ranged from .57 to .88 and R^2 from .32 to .78(Table 4).

Construct reliability(Hair, Anderson, Tatham, & Black, 1995) for each of the three PCS subscales was very high, specifically, .91 for *Clothing in Relation to Self as Structure-Process*(7 items), .94 for *Clothing in Relation to Self-esteem-Evaluative and Affective Processes*(7 items), and .84 for *Clothing in Relation to Body Image and Body Cathexis*(5 items). Correlations among the factors were still quite high ranging from .79 to .89(Table 4). This may be due in part to the wide age range of the older persons included in this study(Dr. Mark Reckase, personal communication, May 2005). No previous research or theory suggested any further combination of dimensions.

In the next test of the 3-factor, second-order struc-

Table 4. Standardized factor loadings and squared multiple correlations for 3-factor, 19-item PCS Scale, construct reliability, and correlations among factors

Dimension #/ Variable	Dimension Name (Construct Reliability)/Item	λ_s	R^2
DIM 1-2-3: Clothing in Relation to Self as Structure – Process (7 items); (Construct Reliability=.912)		.90	.81
PCSD108	The clothes I wear help me to be who I am.	.82	.67
PCSD111	I am a certain type of person, and my clothes reflect that.	.72	.52
PCSD207	I often wear certain clothing to let people know what kind of person I am.	.78	.61
PCSD208	I want my clothes to make a statement about me without any need for words.	.82	.67
PCSD212	Through my clothing, I can show my values to others.	.80	.64
PCSD302	How I look in my clothing is important because I want others to accept me.	.76	.57
PCSD313	I'm careful in wearing certain styles or brands of clothing because they affect how people respect me.	.71	.51
DIM 4-5: Clothing in Relation to Self-esteem – Evaluative and Affective Processes (7 items); (Construct Reliability=.937)		.98	.97
PCSD402	The clothes I like to wear help me feel self-assured.	.88	.78
PCSD403	My self-confidence increases when I dress appropriately.	.84	.71
PCSD406	When I wear clothes that make me feel good, I am better able to talk with others.	.82	.68
PCSD409	Good quality clothes that look good on me make me feel competent.	.79	.63
PCSD506	Taking time to dress up gives me a feeling of pride in how I look.	.85	.72
PCSD507	When I look good in what I wear, I feel content with myself.	.83	.69
PCSD511	I feel good about myself when I have something new to wear.	.76	.58
DIM 6: Clothing in Relation to Body Image and Body Cathexis (5 items); (Construct Reliability=.843)		.88	.78
PCSD605	I avoid certain styles or colors in clothing that do not enhance my body build or figure.	.67	.44
PCSD608	I wear certain clothing styles to change the way my body looks.	.79	.62
PCSD609	The way my clothing fits affects the way I feel about my body.	.85	.72
PCSD610	When I'm dissatisfied with a part of my body, I wear clothing that draws attention away from it.	.57	.32
PCSD611	I choose clothes that accent the parts of my body that I like.	.70	.49

Factor Correlations	PCSDIM1-2-3 — PCSDIM4-5: .89	PCSDIM1-2-3 — PCSDIM6: .79	PCSDIM4-5 — PCSDIM6: .87

Notes. N=250. PCSD is an observed variable acronym meaning Proximity of Clothing to Self (PCS) Dimension; λ_s=standardized factor loading; R^2=squared multiple correlation coefficient; R^2 values range from zero to one with higher values indicative of reliable variance explained.

tural model, the first-order endogenous factors(PCS dimensions) were modeled as linear combinations of the second-order exogenous factor(PCS) and a unique variable for each first-order factor. The 19 endogenous observed variables(PCS items) were linear combinations of the first-order factors and a residual or error variable. The discrepancy function and model fit indexes for the second-order CFA model are given in the lower half of <Table 3>.

A comparison of the results from the first-order to second-order model shows exact correspondence in the goodness of fit indexes(Table 3). The standardized factor loadings and R^2 were identical to those previously reported in <Table 4> for the common parameters shared between the first- and second-order models. The standardized factor loadings for the first-order factors(i.e., specific PCS dimensions) on the second-order factor(i.e., PCS) and the R^2, which show the amount of variance in the first-order factors explained by the second-order factor, are also given in <Table 4>.

Clothing in Relation to Self-esteem-Evaluative and Affective Processes(PCS DIM 4-5) had the strongest factor loading, and 97% of its variance was explained by PCS. The remaining two dimensions in order of strength were *Clothing in Relation to Self as Structure-Process*(PCS DIM 1-2-3; R^2=.81) and *Clothing in Relation to Body Image and Body Cathexis*(PCS

DIM 6; R^2=.78). These findings show that the variances of the three PCS dimensions were well explained by PCS.

IV. Conclusions and Recommendations for the Future

Completion of three rounds of the CFA using SEM resulted in a 3-factor, 19-item PCS Scale with demonstrated construct validity and reliability for older persons, age 65 and over. The initially hypothesized 6-factor scale(Sontag & Lee, 2004) was not confirmed for adolescents in their study nor with older persons in this study. In addition, as explained in the previous section, the 4-factor solution for the adolescent group did not hold for older persons. It appears that the self-system of older persons is more integrated than may be true for younger individuals.

Only 19 PCS items were retained in the PCS Scale for use with older persons whereas 24 were retained in the PCS Scale for adolescents. Some PCS items performed differently for these two age groups. For example, PCSD105 *What I wear is consistent with who I am*, PCSD106 *My clothing is a part of me, not just a simple possession*, and PCSD211 *What I wear and the way I wear it shows others my attitudes* are not in PCS Dimension 1-2-3 for the older group but are included in the final set of items in the 4-factor PCS Scale for the adolescent group. PCSD111 *I am a certain type of person, and my clothes reflect that* which is not in the final set of items for the adolescent group, is in the PCS Scale for the older group. Only two of the four items of original Dimension 3, PCSD302 and PCSD313(i.e., *How I look in my clothing is important because I want others to accept me* and *I'm careful in wearing certain styles or brands of clothing because they affect how people respect me*, respectively) are included in the combined PCS DIM 1-2-3.

Under PCS DIM 4-5, *Clothing in Relation to Self-esteem-Evaluative and Affective Processes*, PCSD402 *The clothes I like to wear help me feel self-assured* was retained for the older group rather than PCSD413 *When I feel good about what I am wearing, then I have confidence in myself* that was retained for the adolescent group. In addition, PCSD507 *When I look good in what I wear, I feel content with myself* was retained for the older group rather than PCSD508 *When I look good in my clothes, I feel good about myself* which was retained for the adolescent group. Contentment may be an affect that develops from a lifetime of experiences. Thus, it appears that arriving at a single uniform PCS Scale for use across the lifespan is not an achievable objective as was hoped by Sontag and Lee(2004). Evidence also suggests that the factor structure of the PCS Scale changes with human development.

For future studies, the researchers recommend using the 3-factor, 19-item PCS Scale for older persons 65 years of age and over. However, there are a few recommendations for future refinement and use of the PCS Scale. Although the 3-factor, 19-item PCS Scale resulted from a national random sample of older persons, another independent test of the scale would be beneficial to be made on a similar age group. If the 3-factor model is confirmed again, then the 19-item PCS Scale could be used with considerable confidence in its validity and reliability with older persons.

Further, it would be advantageous to test the factor structure on samples of older persons covering narrower age ranges than that used in this study because the high correlation achieved among the PCS dimensions may be due in part to the wide age range of this study's participants. In addition, the factor structure needs to be confirmed with other age groups such as young adults(i.e., age 35-64). Using SEM, a researcher could begin by testing the 6-factor model as originally proposed. If the 6-factor model does not hold, then the researcher should proceed with testing 5-, 4-, and 3-factor models to determine the best structure for these groups. Sontag and Lee(2004) made additional recommendations for further studies that are still relevant based on the findings reported here.

Undoubtedly, this research is important and unique because it contributes to and builds upon continued use of the concept, PCS, that has been developed in the field of clothing and human sciences.

References

Arbuckle, J. L. & Wothke, W. (1999). *Amos 4.0 user's guide*. Chicago, IL: SmallWaters Corporation.

Bollen, K. A. & Stine, R. A. (1993). Bootstrapping goodness-of-fit measures in structural equation models. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 111-135). Newbury Park, CA: Sage Publications.

Buckley, H. M. & Roach, M. E. (1974). Clothing as a nonverbal communicator of social and political attitudes. *Home Economics Research Journal, 3*, 94-102.

Cooley, C. H. (1902). *Human nature and the social order*. New York: Charles Scribner's Sons.

Creekmore, A. M. (1974). *Clothing related to body satisfaction and perceived peer self*. (Research Rep. No. 239). East Lansing: Michigan Agricultural Experiment Station.

Dickey, L. E. (1967). *Projection of the self through judgments of clothed-figures and its relation to self-esteem, security-insecurity and to selected clothing behaviors*. Unpublished doctoral dissertation, The Pennsylvania State University, University Park.

Kwon, Y. H. (1994). Feeling toward one's clothing and self-perception of emotion, sociability, and work competency. *Journal of Social Behavior and Personality, 9*, 129–139.

Lee, J. (1997). *Proximity of clothing to self: Its relationship to self-perception, clothing deprivation and gender among adolescents*. Unpublished doctoral dissertation, Michigan State University, East Lansing.

Lee, Y. A. (2005). *Older persons' successful aging: Relationships among proximity of clothing to self, age identity, and self actualization*. Unpublished doctoral dissertation, Michigan State University, East Lansing.

Lynn, M. L. (1990). *Proximity of clothing to self: Implications for the elderly consumer*. Unpublished master's thesis, University of Illinois, Urbana.

Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multi-variate data analysis*. Englewood Cliffs, NJ: Prentice Hall.

James, W. (1890). *The principles of psychology* (Vol. 1). New York: Henry Holt & Co.

Mardia, K. V. & Foster, K. (1983). Omnibus tests of multinormality based on skewness and kurtosis. *Communications in statistics: Theory and methods, 12*, 207–221.

Mead, G. H. (1967). Mind, self, and society. In C. W. Morris (Ed.), *Works of george herbert mead* (Vol. 1), (pp.42-335). Chicago: The University of Chicago Press.

Raj, D. (1972). *The design of sample surveys*. New York: McGraw-Hill Book Company.

Reed, J. (1973) *Clothing as a symbolic indicator of the self*. Unpublished doctoral dissertation, Purdue University, West Lafayette.

Roach, M. E. & Eicher, J. B. (1973). *The visible self: Perspectives on dress*. Englewood Cliffs, NJ: Prentice-Hall.

Rogers, C. R. (1951). *Client-centered therapy*. Boston: Houghton Mifflin.

Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.

Salant, P. & Dillman, D. A. (1994). *How to conduct your own survey*. New York: Wiley.

Schmerbauch, D. A. (1993). *Perception of the psychological closeness of dress and self-esteem by early and late adolescents*. Unpublished master's thesis, University of Illinois, Urbana.

Shim, S., Kotsiopulos, A., & Knoll, D. S. (1991). Body cathexis, clothing attitude, and their relations to clothing and shopping behavior among male consumers. *Clothing and Textiles Research Journal, 9*, 35–44.

Slocum, A. C. (1981). Clothing and perceived quality of life. *ACPTC Combined Proceedings, 38*, 23–33.

Sontag, M. S. (1978). *Clothing as an indicator of perceived quality of life*. Doctoral dissertation, Michigan State University, East Lansing.

Sontag, M. S. & Lee, J. (2004). Proximity of clothing to self scale. *Clothing and Textile Research Journal, 22*(4), 161–184.

Sontag, M. S. & Schlater, J. D. (1982). Proximity of clothing to self: Evolution of a concept. *Clothing and Textile Research Journal, 1*, 1–8.

Stone, G. P. (1962). Appearance and the self. In A. M. Rose (Ed.), *Human behavior and social processes: An interactionist approach* (pp. 86-118). New York: Houghton Mifflin.

Vreeman, A. L. (1985). *Apparel purchase behavior: An investigation of apparel as a high involvement product*. Unpublished master's thesis, University of Illinois, Urbana.

U.S. Bureau of the Census. (2003). *The 65 years and over population: 2000*, Washington, DC: GPO. Retrieved August 10, 2004, from http://www.census.gov/population.

요 약

의복의 자아 근접성 개념을 기반으로 한 여러 연령층의 설문조사 결과를 바탕으로 하여 2004년에 Sontag과 Lee가 객관적 측정도구, 의복의 자아 근접성 척도(PCS Scale)를 개발하였다. Sontag과 Lee는 24-항목을 포함한 4-요인으로 구성된 PCS 척도를 청소년층을 대상으로 타당화 하였다. 본 연구는 그들 연구의 연계로 초기 6-요인으로 구성되었던 PCS 척도를 노년층에 적용하여 19-항목을 포함한 3-요인으로 구성된 PCS 척도를 타당화 한다. 65세 이상의 노인층이 본 연구의 표본집단으로 설정되었고 임의 표집 방법을 이용, 미국 전역 1,700명의 노년 표본이 표본조사회사로부터 구입되었다. 2004년 11월 설문조사가 시작되어 2005년 2월에 총 250개의 이용 가능한 설문자료가 수집되었다(15.6%의 응답 비율). PCS 척도의 타당성을 검증하기 위하여 Sontag과 Lee의 연구에서 사용한 요인분석과 신뢰도분석을 동일하게 3단계 절차로 노인층을 대상으로 실시하였다. AMOS 5.0 을 사용한 3단계 신뢰도 분석 결과 19-항목을 포함한 3-요인으로 구성된 PCS 척도의 타당성이 노인층을 대상으로 검증되었다. 노인층의 PCS 척도는 다음의 3-요인으로 구성 된다: 1) 의복이 자아 구성 과정에 미치는 영향(PCS 요인 1-2-3의 병합), 2) 의복이 평가적이고 정서적인 자존 형성과정에 미치는 영향(PCS 요인 4-5의 병합), 그리고 3) 의복이 신체상과 신체에 쏟는 정신 집중정도에 미치는 영향(PCS 요인 6). Sontag과 Lee가 초기적으로 가설한 6-요인 PCS 척도는 청소년층과 노인층을 대상으로 한 어느 연구에서도 검증되지 않았다. 더 나아가, 이들이 검증한 청소년층의 4-요인 PCS 척도도 노인층을 대상으로 한 연구에서 검증되지 않았다. 이는 노인들의 자아 구성이 젊은 층보다 더 통괄/복합적인 것에서 기인된다고 보인다. 이 글은 PCS 척도의 앞으로의 연구방향과 이용방향을 끝으로 마무리 지어 진다.