

**SELF-TRANSCENDENCE: CONCEPTUALIZATION
AND MEASUREMENT***

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ABSTRACT

Self-transcendence has been hypothesized to be a critical component of wisdom (Curnow, 1999) and adaptation in later life (Tornstam, 1994). It reflects a decreasing reliance on externals for definition of the self, increasing interiority and spirituality, and a greater sense of connectedness with past and future generations. The Adult Self-Transcendence Inventory was administered to 351 individuals along with the NEO-FFI Personality Scale (McCrae & Costa, 1989). A principal axis factor analysis identified two factors: self-transcendence and alienation. The relationships between self-transcendence and neuroticism, openness to experience, extraversion, and agreeableness were significant, although modest, suggesting that self-transcendence cannot be accounted for in terms of positive personality traits alone. As expected, a multiple regression analysis indicated that self-transcendence was negatively related to neuroticism and positively related to meditation practice. The present study appears to lend support to the construct of self-transcendence.

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INTRODUCTION

Frankl (2000) regarded self-transcendence as an innate desire to discover meaning in human life. A similar construct, gerotranscendence (Tornstam, 1994) may be particularly important in late life. Gerotranscendence refers to an apparently spontaneous process of self-transcendence in many older adults and includes a decreasing reliance on social definitions of self, increasing interiority, and a greater sense of connectedness with past and future generations. Tornstam theorized that gerotranscendence can be a response to the aging process itself with its expected losses of social roles and the diminishing convoy of one's friends and family (Antonucci, 2001), but distinguished this process from alienation due to disengagement (Cumming & Henry, 1961; Havighurst, Neugarten, & Tobin, 1968). Reed (1991) and her colleagues assessed self-transcendence in the context of life-threatening illnesses and end of life issues. They conceptualized self-transcendence as growing spirituality involving both an expansion of boundaries and an increased appreciation of the present. Both Reed and Tornstam hypothesized that transcendence does not necessarily have to await old age but can be realized by individuals at any age through spiritual practices or coping with trauma. A model for this is contained in the biblical story of Job in which Job receives many afflictions in order to test his devotion to God (Achenbaum & Orwoll, 1991).

In many ways, the construct of self-transcendence is similar to Habermas' (1971) emancipatory form of knowledge. Habermas posited three basic "knowledge constitutive interests." Practical and technical interests consist of social, organizational, and scientific forms of knowledge, while a third he called emancipatory involves increasing freedom from biological and social conditioning. Levenson and Crumpler (1996) argued that the emancipatory interest is the central theme of adult development and reflects a largely purposive developmental trajectory with liberation as its ultimate goal. Levenson, Aldwin, and Cupertino (2001) argued that self-transcendence is a developmental process that forms a pathway to wisdom.

Curnow (1999), distilling the principal concerns of the wisdom traditions in both European and Asian philosophies, arrived at four central features of wisdom: self-knowledge, detachment, integration, and self-transcendence. While some have posited self-transcendence as a trait (Cloninger, Svrakic, & Przybeck, 1993), it may also usefully be understood as a result of a developmental process with Curnow's (1999) aspects of wisdom serving as stages of development as understood by the liberative model.

Self-transcendence can be best understood in terms of the phases of development that precede it. Self-knowledge is the awareness of the sources of one's sense of self. The sense of self arises in the context of roles, achievements, relationships, and beliefs. It is also a sense of enduring duality that we conceptualize as self and other. Detachment involves an understanding of the transience and provisional

nature of the things, relationships, roles, and achievements that create and sustain our sense of self. Integration is the dissolution of separate “inner selves” reflected in the defense mechanisms that defend ego against threats to self-worth. Being able to detach from external definitions of the self and dissolving rigid boundaries between self and other allows for self-transcendence (Loy, 1996).

The processes by which development occurs in adulthood are seldom addressed. Clearly, some sort of maturation exists in early adulthood (McCrae et al., 1999; Roberts, Caspi, & Moffitt, 2001). Pasupathi, Staudinger, and Baltes (2001) showed that young adults show substantial increments in the development of wisdom, as compared to adolescents. Other authors have argued that development in adulthood is related to processes that are not necessarily age graded (Alexander, Druker, & Langer, 1990), such as the process of coping with stress (Aldwin & Levenson, 2001, 2001) or losses, which Tornstam (1994) has hypothesized to be crucial to the development of self-transcendence.

Likewise, Achenbaum and Orwoll (1991) suggested that coping with loss promotes the development of wisdom as exemplified by the story of Job. By accepting his suffering and by seeking deeper understanding of his relationship with God, Job is transformed. Extending Birren and Fisher’s (1990) model of wisdom encompassing the affective, cognitive, and conative dimensions, Achenbaum and Orwoll (1991) added the intrapersonal, interpersonal, and transpersonal dimensions resulting in a two-dimensional matrix. They describe Job’s transformation as a stage-like process involving self-development, empathy, and self-transcendence (intrapersonal, interpersonal, and transpersonal affect); self-knowledge, understanding, and recognition of limits of understanding (intrapersonal, interpersonal, and transpersonal cognition); and integrity, maturity in relationships, and philosophical/spiritual commitments (intrapersonal, interpersonal, and transpersonal conation). While they recognize that the development of wisdom can progress in stages, they see self-transcendence as limited to the affective dimension, while we suggest that it is an aspect of the cognitive and conative, as well. Furthermore, for us, self-transcendence plays a more central role. In the contemplative traditions from which Curnow’s (1999) and our own theories of self-transcendence are derived, self-transcendence is equivalent to wisdom and implies the dissolution of (self-based) obstacles to empathy, understanding, and integrity.

Other avenues of adult development may be agentic, such as self-development (Brandstädter, Wentura, & Rothermund, 1999). It is possible that self-transcendence may develop through purposive practices such as meditation. While much research has been done on the physical health benefits of meditation practices (for a review see Andresen, 2000), a central purpose of meditation in traditional contemplative psychologies has been to change both cognitive and personality processes (Levenson et al., 2001). The process of quieting the mind not only changes and stabilizes how one thinks but should also stabilize emotions, lowering anxiety and excitability (Miller, Fletcher, & Kabat-Zinn, 1995). The

“inner peace” that meditation can confer is also a central element in self-transcendence (Walsh, 1993).

Thus, it is likely that self-transcendence has protective mental health effects. Self-transcendence is correlated with hope, emotional well-being, and a sense of coherence in both healthy adults and people with serious illnesses (Coward, 1996, 1998, 2000). Reed (1991) found that self-transcendence was negatively correlated with depression in healthy adults, although the effect was stronger for younger than for older adults. McCoy, Pyszczynski, Solomon, and Greenberg (2000), writing from the perspective of terror management theory, regard self-transcendence as central in helping older persons cope with impending death. Self-transcendence may assist in adjusting to and compensating for loss and promote successful aging (see Aldwin & Gilmer, 2004).

Assessing Self-Transcendence

At present, there are four measures of self-transcendence in the literature. All represent interesting preliminary steps, but all have conceptual or methodological limitations. Tornstam (1994) identified eight characteristics of gerotranscendence comprising two factors. Cosmic transcendence includes:

an increasing feeling of cosmic communion with the spirit of the universe; a redefinition of the perception of time, space, and objects; a redefinition of the perception of life, death, and a decrease in the fear of death; and an increasing feeling of affinity with past and coming generations. . . [Ego transcendence involves] a decrease in the interest in superfluous social interaction; a decrease in the interest in material things; a decrease in self-centeredness; and an increase in time spent in meditation (Tornstam, 1994, pp. 208-209).

Tornstam developed the Gerotranscendence Scale based upon these characteristics. Unfortunately, the psychometric properties of Tornstam’s instrument are questionable, as the subscales were not created by factor analysis and there is no indication of internal reliability. Moreover, the English version of the scale contained some awkward phrasings, and the time scale reflected in the items (e.g., “compared to when I was 50 years of age”) is more readily applied to elderly persons (Tornstam, 1994, p. 214).

Based upon focus groups, Atchley (1999) presented a much shortened and rephrased version of Tornstam’s (1994) scale. He concluded that gerotranscendence was centrally expressed by three items: 1) “Death is less frightening”; 2) “I take more enjoyment from my inner life”; and 3) “I feel greater connection with the universe” (Atchley, 1999, p. 143). These items formed a scale with an internal reliability coefficient of .66.

Reed’s (1991) instrument identifies intrapersonal, interpersonal, and temporal experiences reflecting expanded boundaries of the self, often characteristic of later life. This focus, as well as the implications of some items, such as “sharing

my wisdom and experience with others” and “helping younger people or others in some way,” limits its use to the elderly (Reed, 1991, p. 6).

Both Piedmont (1999) and Cloninger et al. (1993) have more psychometrically sophisticated measures of transcendence, but both explicitly treat self-transcendence as a personality trait rather than a developmental process (although the two are not necessarily mutually exclusive). Thus, there is a need for an instrument that is developmental in nature, can differentiate between alienation and transcendent concerns, and is more lifespan inclusive.

Present Study

Drawing upon Tornstam's (1994) construct of gerotranscendence, we developed the Adult Self-Transcendence Inventory (ASTI) to measure the construct of transcendence across a broad range of ages. Retaining Tornstam's emphasis on developmental change, we reworded items to make their meaning clearer, added new ones to broaden the construct, and added additional items to tap alienation in order to test the difference between the effects due to self-transcendence and those due to alienation. In the present study, we present some preliminary steps in validating this instrument, including determining relationships among self-transcendence, personality traits, and meditation practice. We hypothesized that personality traits would be differentially associated with self-transcendence and alienation. For example, we expected that neuroticism would be associated with alienation, while openness to experience would be associated with self-transcendence. Furthermore, we expected that reported meditation practice would be associated with self-transcendence and inversely associated with personality traits such as neuroticism.

METHOD

Sample and Procedure

The survey was completed online. In order to include different ages and amounts of life experience, we sought to elicit responses from a university-wide population. The sample consisted of 341 respondents drawn from the faculty, staff, and student body of the University of California, Davis. We invited them to participate in the study by a general university-wide e-mail message. The study was presented as assessing the effects of meditation. No respondents' questionnaires were excluded from the analysis.

Respondents ranged in age from 18 to 73 ($M = 34$; $SD = 12$). There were 254 (72.5%) female and 87 (24.8%) male respondents. Not surprisingly, respondents were highly educated, with more than half (54.9%) having a post-graduate degree. Nearly three quarters (73.5%) of the participants identified themselves as European American, 13.3% were Asian American, 7.4% were Hispanic, and

2.8% were Native American. More than one-third (37.6%) of the sample reported having a meditation practice of some kind.

Measures

The ASTI consists of 18 Likert-scaled items ranging from 1 (*disagree strongly*) to 4 (*agree strongly*). To broaden the range of application of the scale to younger samples, the instructions asked the participants to respond to the items “compared to five years ago.” In order to explicitly address Tornstam’s (1994) distinction between gerotranscendence and alienated withdrawal, we included items to assess alienation as well as self-transcendence. The transcendence aspect of the scale includes items such as, “My sense of self is less dependent on other people and things,” and “Material things mean less to me.” The scale also included items intended to tap the alienation construct such as, “I feel that my life has less meaning” and “I feel more isolated and lonely” that also could be described as measures of negative mood or affect. The alienation items were intended to test Tornstam’s hypothesis that self-transcendence is distinct from social isolation or withdrawal based on alienation.

To explore the relationship between the ASTI and possible personality correlates, we also administered the NEO-FFI Personality Inventory (McCrae & Costa, 1989), a 5-factor inventory of personality traits. The NEO-FFI consists of 60 Likert-scaled items (1–5) ranging from *strongly agree* to *strongly disagree* with 12 items representing each personality factor. Each of the scales exhibited good internal consistency: neuroticism ($\alpha = .86$), extraversion ($\alpha = .79$), openness to experience ($\alpha = .74$), conscientiousness ($\alpha = .85$), and agreeableness ($\alpha = .73$).

The survey also included one dichotomous item that asked whether or not our participants had a meditation practice. Individual scores for each factor on the ASTI and the NEO-FFI were Michigan-scored to compensate for missing data.

RESULTS

Univariate Analysis

Both ASTI subscales were fairly normally distributed (see Figures 1 and 2). Both alienation and self-transcendence were somewhat skewed in the protrait directions. However, neither distribution was kurtotic. The mean for alienation was 10 out of a possible 20, while the mean for self-transcendence was 30 out of a possible 40. Inspection of ASTI individual item response frequency distributions for skewness and kurtosis, indicated that only one item, “I feel that my life has less meaning,” exhibited slightly elevated skewness, suggesting that social desirability of the items was not a limiting factor.

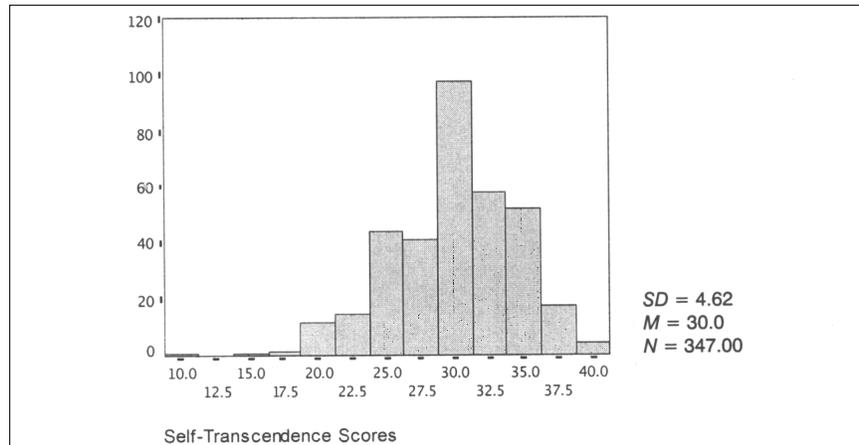


Figure 1. Histogram of Self-Transcendence scores.

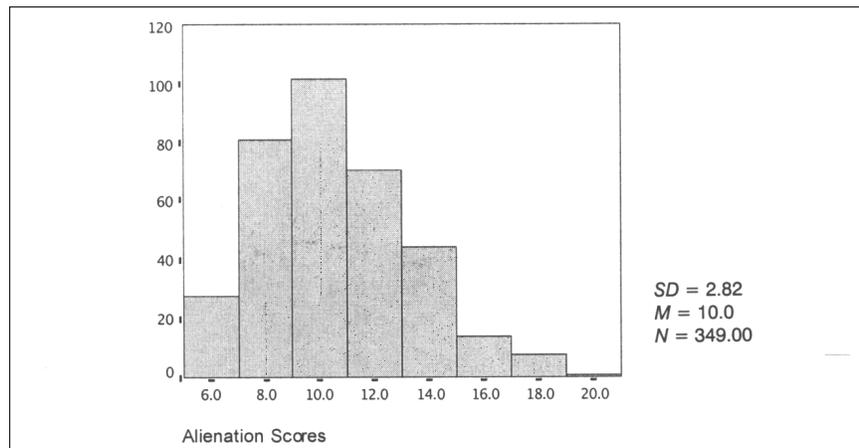


Figure 2. Histogram of Alienation scores.

Factor Analysis

The ASTI items were factor analyzed with the method of iterative principal axes. In determining the number of factors that would best represent the data, we performed a series of analyses. A parallel analysis (Humphreys & Montanelli, 1975) was used to determine whether the initial factors emerging from the data would explain more of the variance than factors based on random data. This was

achieved by computing eigenvalues from a principal axis factor analysis with squared multiple correlations (SMCs) as the communality estimates. These were compared with estimated eigenvalues from random data, using the method proposed by Montanelli and Humphreys (1976). The eigenvalues based on real and random data were plotted against each other; only those factors with eigenvalues greater than those generated by the random procedure were further studied. This determines the possible number of factors by indicating at which point the extracted factors identified are no different from those generated by a random analysis.

We also examined two different scree tests to determine the “true” number of factors. The first scree test used eigenvalues which in SPSS are generated from a principal components analysis. This analysis uses unities (1.00) as the communality estimates. However, this tends to overestimate the number of eigenvalues greater than one, especially in smaller samples (Guttman, 1954). Thus, the second scree computed eigenvalues from a correlation matrix with estimated communalities based upon SMCs which corrects for this over-inflation (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

As Figure 3 indicates, we reviewed factors with eigenvalues greater than one (Guttman, 1954). Comparison of the parallel analysis with the eigenvalues generated from the SMCs showed that they crossed at five factors, indicating that five is the maximum number of factors. As anticipated, the eigenvalues from the unities analysis were greater than those from the SMCs. There were five eigenvalues above 1 using unities, but only two above 1 using the SMCs. Further, both of these scree tests “broke” at two factors, suggesting that this is the true factor solution. With no a priori hypothesis specifying uncorrelated common factors, the two factors were rotated with a Harris-Kaiser orthoblique rotation, with a power of 0.5 (Harris & Kaiser, 1964). This rotation begins as a varimax but allows oblique rotation if warranted, depending on the power rating.

The factor loadings are presented in Table 1. The first factor had 10 items with factor loadings higher than .3. These included items such as “My peace of mind is not so easily upset as it used to be” and “My sense of self is less dependent on other people and things.” This factor was labeled self-transcendence. The second factor had five items, such as “I feel more isolated and lonely” and “I feel that my life has less meaning.” One item doubled-loaded, but it was positive on factor 1, and negative on factor 2; thus, it was left on the first factor. Three items did not have significant loadings on either factor and were not included in the subscales. We suspected that these items might yield significant loadings with data from a sample of older individuals.

For the most part, items loaded on the predicted factors. Exceptions included “My sense of self has decreased as I have gotten older,” and “I am less interested in seeking social contact,” both loaded on the alienation rather than the transcendence factor, contrary to expectations.

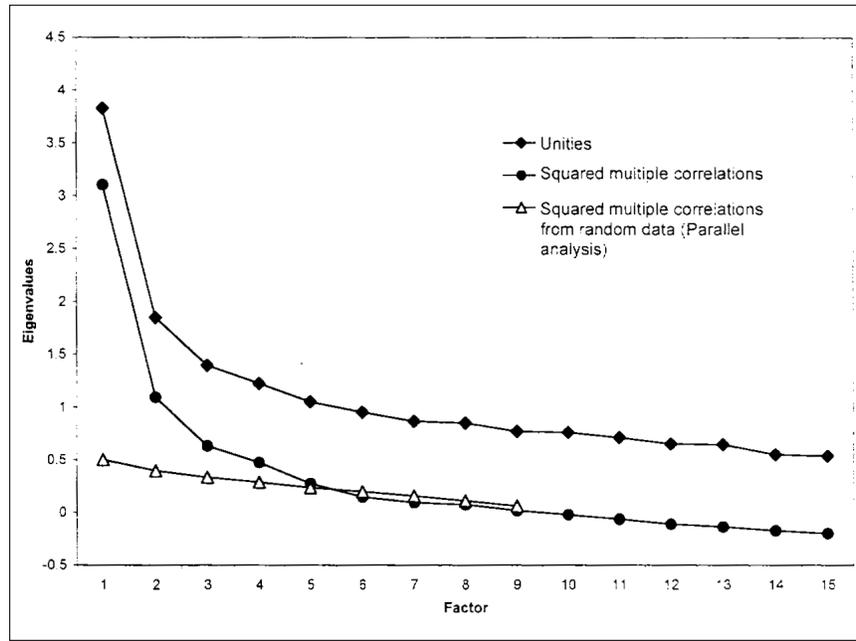


Figure 3. Parallel analysis ($N = 324$).

Two subscales were created on the basis of the factor analysis. Items were unit weighted and summed, using the Michigan Scoring technique (75% criterion). The ASTI subscales exhibited acceptable internal reliability ($\alpha = .75$ and $.64$ for factors 1 and 2 respectively).

Correlates of the ASTI

In the present sample, self-transcendence and alienation were unrelated to age, gender, or educational status (see Table 2). On the possibility that there was a non-linear relationship between age and self-transcendence, we examined the scatterplot, which confirmed that there was no relationship, as did a hierarchical regression equation examining age and age-squared.

The subscales of the ASTI were related to personality characteristics as assessed by the NEO-FFI (McCrae & Costa, 1989). Self-transcendence was negatively correlated with neuroticism ($r = -.28, p \leq .001$), and was positively and modestly correlated with the other four personality measures, with correlations ranging between $.16$ ($p \leq .01$) and $.23$ ($p \leq .001$). Alienation was positively and moderately correlated with neuroticism ($r = .50, p \leq .001$) and negatively correlated with extraversion ($r = -.31, p \leq .001$), agreeableness ($r = -.30, p \leq .001$),

Table 1. Rotated* Factor Pattern Matrix for the Adult Self-Transcendence Inventory ($N = 354$)

Item	Factor loadings	
	Factor 1	Factor 2
7. My peace of mind is not so easily upset as it used to be	.57	-.18
12. I do not become angry as easily	.54	.03
16. Material things mean less to me	.52	.11
11. My sense of self is less dependent on other people and things	.50	-.07
18. I feel much more compassionate, even toward my enemies	.46	-.07
1. I am more likely to engage in quiet contemplation	.41	.03
2. I feel that my individual life is a part of a greater whole	.37	-.18
6. I feel a greater sense of belonging with both earlier and future generations	.37	-.20
3. I have become less concerned about other people's opinions of me	.37	-.08
15. I find more joy in life	.37	-.37
13. I take myself less seriously	.28	.07
5. I am more focused on the present	.26	-.08
8. I feel more isolated and lonely	-.14	.63
4. I feel that my life has less meaning	-.02	.54
17. I am less optimistic about the future of humanity	.03	.49
10. My sense of self has decreased as I have gotten older	-.04	.47
9. I am less interested in seeking out social contacts	.15	.45
14. I have less patience with other people	-.23	.22

*Harris-Kaiser orthoblique rotation, $hkp = 0.5$; listwise deletion for missing data.

and conscientiousness ($r = -.15$, $p \leq .01$), but surprisingly was unrelated to openness to experience.

Meditation practice was positively related to self-transcendence ($r = .30$, $p \leq .001$) and negatively to alienation ($r = -.13$, $p \leq .05$). It was also related to one NEO scale, namely openness to experience ($r = .25$, $p < .001$).

A hierarchical multiple regression analysis with backward elimination was performed with self-transcendence as the dependent variable and the five personality factors and meditation practice as the predictor variables (see Table 3). The equation was significant, but accounted for only 18% of the variance

Table 2. Intercorrelations between Subscales

	1	2	3	4	5	6	7	8	9	10
1. Self-transcendence	—	-0.25***	-0.28***	0.16**	0.20***	0.23***	0.20***	0.30***	0.01	0.06
2. Alienation		—	0.50***	-0.31***	-0.03	-0.30***	-0.15**	-0.13*	-0.10	-0.02
3. Neuroticism			—	-0.43***	-0.02	-0.27***	-0.31***	-0.02	-0.20***	0.12*
4. Extraversion				—	0.04	0.21***	0.12*	0.10	0.03	-0.02
5. Openness					—	0.18***	0.00	0.25***	0.11*	-0.03
6. Agreeableness						—	0.16**	0.10	0.17**	0.09
7. Conscientiousness							—	0.08	0.05	0.12*
8. Meditation								—	-0.05	0.10
9. Age									—	-0.11
10. Gender										—
<i>M</i>	29.99	10.03	32.75	40.80	45.97	46.20	45.11	0.37	34.05	0.75
<i>SD</i>	4.61	2.84	8.59	6.70	6.08	5.68	7.14	0.48	12.12	0.44

Note: Gender coded 0 = male, 1 = female.

* $p \leq 0.05$ (2-tailed). ** $p \leq 0.01$ (2-tailed). *** $p \leq 0.001$ (2-tailed).

Likewise $N = 335$.

Table 3. Summary of Hierarchical Regression Analysis for Variables Predicting Self-Transcendence ($N = 345$) (Backward Elimination)

Predictors	B	$SE B$	β	t	p
Neuroticism	-0.11	0.03	-0.20	-3.83	0.00
Openness	0.08	0.04	0.10	1.93	0.06
Agreeableness	0.08	0.04	0.09	1.73	0.08
Conscientiousness	0.08	0.03	0.13	2.44	0.02
Meditation	2.25	0.49	0.23	4.62	0.00

Note: $R^2 = .18$, $F(1, 346) = 15.48$, $p < .001$. Missing data replaced with mean.

($F = 15.48$, $p \leq .001$). As predicted, the analysis revealed that neuroticism ($\beta = -.20$) was a negative predictor of self-transcendence while openness to experience ($\beta = .10$), agreeableness ($\beta = .09$), and conscientiousness ($\beta = .13$) were positive predictors. Meditation Practice ($\beta = .23$) was the strongest positive predictor of self-transcendence.

DISCUSSION

Two factors were found reflecting the constructs of self-transcendence and alienation. These two factors are negatively correlated, consistent with Tornstam's (1994) critique of the interpretation of disengagement as mere social isolation. Extraversion, openness to experience, agreeableness, and conscientiousness were positively related to self-transcendence, while neuroticism and alienation were negatively related. All of the correlations and the standardized regression coefficients were fairly modest, suggesting that self-transcendence is not simply a restatement of personality traits but is an independent construct, which accords with Piedmont's (1999) observation. Alienation was negatively related to extraversion, agreeableness, and conscientiousness and was also negatively correlated with self-transcendence and meditation. Meditation practice was positively related with self-transcendence and openness to experience.

As noted above, the alienation items could easily be thought of as negative affectivity and the results, namely the moderately strong correlation with neuroticism, could be taken as evidence for this possibility. On the other hand, the self-transcendence items do not appear transparently to reflect mere positive mood. Of course, a person scoring high on self-transcendence would be expected to experience more positive moods than someone scoring low; there are perhaps many ways of enhancing mood besides self-transcendence, suggesting that self-transcendence has considerable meaning that could not be explained simply by

positive mood states. The closest potentially relevant mood might be serenity. Roberts and Cunningham (1990) presented a theory of serenity that does appear to have considerable resemblance to our conceptualization to self-transcendence. It would be interesting to compare the two scales in future research.

The ASTI items, because they are based on a theory of self-transcendence, emphasize face validity. We were aided in this effort by being able to consult Tornstam's (1994) earlier scale. In examining Tornstam's two dimensions of gerotranscendence (self-transcendence and cosmic transcendence), it appeared to us that cosmic transcendence would be much more difficult to express in items that would be face valid for most respondents. Atchley (1999) reached a similar conclusion on the basis of his focus group studies. We, therefore, decided to concentrate on self-transcendence as a changed perspective on the self in relation to other people, social status, material objects, one's own self-importance, and the sense of oneself as part of a greater whole. We avoided items with cosmic implications including changed perceptions of time and the universe in general.

While most of the items written to assess self-transcendence performed as expected, "I am less interested in seeking out social contacts" and "my sense of self has decreased as I have gotten older" loaded on alienation rather than self-transcendence. The former item was adapted from Tornstam's (1994) item, "Today I am less interested in superficial social contacts" (p. 214). This item loaded on Tornstam's Ego Transcendence factor in his sample of very old individuals. The inclusion of the word "superficial" may have made a difference. Also, Tornstam's scale was developed specifically for the very old and was intended to discriminate between gerotranscendence and disengagement (Tornstam & Toernqvist, 2000). Tornstam hypothesized that elders experiencing both these states would be less interested in socializing, but for different reasons. In his qualitative study, he found that elders he identified as transcendent reported much less interest in superficial social interaction because they were content to spend time alone in quiet contemplation. Perhaps a younger sample such as ours would not reflect this difference. It may also be that, in a younger sample, reporting a lack of a sense of self would reflect low self-esteem or even some form of psychopathology. The failure of these items to perform as expected reflects the difficulty of writing items that have sufficient clarity when addressing broad topics concerned with the meaning of life. Thus, the scale remains subject to revision.

Surprisingly, we found no relation between age and self-transcendence or alienation, but it should be noted that the mean age of our sample was quite young ($M = 34$), and the age relationship may emerge in an older sample. Nevertheless, it is noteworthy that even in this young sample, we were able to establish this construct psychometrically. Further, it should be noted that there was a fairly large proportion of meditators in this study and, thus, this type of purposeful developmental effort may over-ride any age effects.

The relationships between personality and the ASTI included a negative relationship between self-transcendence and neuroticism, as expected. The

multiple regression analysis indicated that neuroticism was a negative predictor of self-transcendence, while openness to experience and meditation practice were modest positive predictors. The relationships between openness to experience, agreeableness and conscientiousness were, while positive, quite modest suggesting that self-transcendence is not simply another name for personality traits.

The relationship between self-transcendence, positive and negative personality characteristics, and meditation is especially interesting. Our research program is inspired by meditation traditions. There is evidence to suggest that meditation can lead to the alleviation of negative mental states such as neuroticism and the production of positive states. While these are not the final goals of meditation, they are necessary precursors of self-transcendence (Goleman, 2003). While the present study is cross-sectional and cannot, therefore, address cause and effect, our results at the least show a relationship between meditation and self-transcendence.

While causal directionality cannot be imputed, we found that meditation practice is related to self-transcendence. Further, it was inversely associated with neuroticism and positively associated with personality traits such as conscientiousness, agreeableness, and openness to experience. This suggests that one can undertake activities that facilitate self-transcendence and positive personality development, which may protect against alienation in later life. However, given that the data are cross-sectional, it is equally likely that certain personality types are more likely to engage in meditation practices. Longitudinal research is needed to establish causal relationships, and future studies should consider strategies that individuals use for self-development in adulthood.

Future Research

The present study offers support for the relevance of Habermas' emancipatory knowledge constitutive interest to aging and adult development. A substantial body of evidence suggests that regular meditation has a strong relationship to positive health outcomes, self-transcendence, and overall well-being (Andresen, 2000). The evidence points to the possibility that self-transcendence itself may be a major contributor to the changes in physiological and psychological states experienced by practitioners. The present study is limited by its cross sectional nature. Future longitudinal research is needed to explore the pathways by which the positive outcomes are produced.

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