

Cosmic Transcendence and Framework of Meaning in Life: Patterns Among Older Adults in The Netherlands

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Objectives. Gerotranscendence has been conceptualized as a potential development accompanying normal aging. Gerotranscendence is defined as a shift in metaperspective from a materialistic and pragmatic world view to a more cosmic and transcendent one. In the past decade, population-based studies have tested Tornstam's Gerotranscendence Scale. Its Cosmic Transcendence subscale, in particular, emerged as consistent. The aim of the present study was to examine (a) how cosmic transcendence relates to having a framework of meaning in life and (b) whether religiousness and demographic characteristics influence possible relationships.

Methods. Participants were 928 older Dutch adults who responded to a questionnaire that included the Cosmic Transcendence scale, aspects of religiousness, and the Framework of Meaning in Life subscale of the Life Regard Index.

Results. A substantial, positive association between cosmic transcendence and framework of meaning in life was observed. This association was much more pronounced among participants who were less involved in religion, who were women, who were age 75 or older, or who were widowed.

Discussion. The current study indicates that the personal relevance of cosmic transcendence depends on cultural factors such as secularization. Furthermore, cosmic transcendence seems to unfold as an important domain in the life view of women, the older old, and the widowed.

THE CONCEPT of gerotranscendence introduced by Tornstam (1989) is defined as a transition from a materialistic and rationalistic perspective to a more cosmic and transcendent view of life that accompanies the process of aging. When researchers discuss contemplation in later life and psychological development in the gerontological literature (e.g., Adams, 2001; Atchley, 1997; Ruth & Coleman, 1996; Wadensten & Carlsson, 2003), they frequently mention gerotranscendence as a valuable concept. Nevertheless, only a few empirical studies have examined gerotranscendence. Empirical studies that explored Tornstam's Gerotranscendence Scale (Braam, Deeg, van Tilburg, Beekman, & van Tilburg, 1998; Tornstam, 1994, 1997a) show that the scale consists of several dimensions. The Cosmic Transcendence subscale has proven to be by and large the most consistent one. Because the notion of a cosmic and transcendent orientation is clearly indicative of one's philosophy of life, investigators can raise questions about how cosmic transcendence relates to a sense of meaning in life and whether a possible relationship depends on the degree of religious involvement. The current study focuses on these questions, following an empirical approach.

Theoretical Background

The theory of gerotranscendence emerged against a background of various models of aging. The deficit model of aging emphasizes how the aging person becomes dependent upon others, no longer has an opportunity to play important roles, and experiences a decline in cognitive and physical health. In contrast, models have been introduced that emphasize successful

aging. Baltes and Baltes (1990) elaborated the successful aging model and theorized that older people were likely to compensate for loss in later life by selectively using and developing other resources still available to them. Tornstam (1992) entered this discussion and wondered whether the pattern of values held by middle-aged adults provided an adequate frame of reference for the older generation. Value patterns held by middle-aged adults pertain, for example, to productivity, effectiveness, and autonomy. Tornstam argued that these value patterns may change with increasing age, giving way to priorities such as rest, relaxation, recreation, creativity, entertainment, and wisdom. Tornstam consequently introduced the concept of gerotranscendence. He assumed that the shift from a materialistic and rationalistic perspective to a more cosmic and transcendent view of life was an intrinsic and continuous process that was accelerated by crises and modified by the cultural environment.

According to Tornstam, the development towards gerotranscendence occurs on three levels. The first is the cosmic level: an increased feeling of unity with the universe; a redefinition of the perception of time, space, life, and death; and a growing affinity with past and future generations. The second level, the redefinition of the self, involves a decrease in self-centeredness and a decline in material interest. These ego characteristics often combine with the features at the third social level, which is characterized by a declining interest in superfluous social contacts and an increasing amount of time devoted to meditation.

Inspired by Tornstam's definition, Erikson and Erikson (1997) summarized the core aspects of transcendence in old age as a logical, possible state for people approaching their 80s and

90s. Erikson and Erikson added to the redefinition of time, space, death, and sense of self with the following description:

Time is circumscribed to now, or maybe next week [...]; beyond that the vista is misty. Space has slowly decreasing dimensions within the radius of our physical capabilities. Death becomes syntonic, the way of all living things. One's sense of self expands to include a wider range of interrelated others. (p. 124)

Assessment of Gerotranscendence in Community Studies: Cosmic Transcendence

Tornstam (1994) explored his concept in a community-based sample of Danish adults aged 74–100. He developed a 10-item gerotranscendence scale based on the outcome of qualitative research (Tornstam, 1997b). Two subscales evolved from factor analysis: Cosmic Transcendence (6 items, including a redefinition of time, space, and generations; and a sense of unity with the universe) and Ego Transcendence (4 items, including a redefinition of the self and personal relationships).

Braam and colleagues (1998) replicated the Danish study among adults aged 56–74 in The Netherlands. The same subscales (Cosmic Transcendence and Ego Transcendence) emerged from the scale analysis, but their psychometric properties were weaker than they had been in the Danish study, especially for Ego Transcendence.

In the United States, researchers explored an adapted 6-item version of the Gerotranscendence Scale among adults older than age 70 in the 1995 wave of the Ohio Longitudinal Study of Aging and Adaptation (Atchley, 1999). Again, two subscales emerged from factor analysis, but only one had acceptable reliability. This subscale consisted of 3 items: feeling a greater connection with the universe, taking more enjoyment from one's inner life, and having less fear of death. One other "cosmic" item, namely feeling an increased affinity with past and future generations, did not load on this main factor.

Tornstam (1997a) designed a second gerotranscendence scale that resolved some of the disadvantages of the first: It used briefer questions and omitted comparisons with the past. In a large sample of Swedish adults aged 20–85, Tornstam analyzed the items of this second scale by using factor analysis. The main factor was the Cosmic Dimension subscale, which consisted of 5 items. In fact, 4 of the 6 items of the original Cosmic Transcendence subscale corresponded with items in the revised scale. Furthermore, Coherence Dimension (2 items) and Solitude Dimension (3 items) subscales were distinguished, but the items on these subscales did not correspond with those in the previous studies.

The results of these four studies provide a certain extent of empirical consistency for the assessment of the cosmic dimension of gerotranscendence. The internal validity of the Cosmic Transcendence scales is acceptable. Moreover, the items meet with high recognition rates among older adults. With respect to the external validity, however, the relationship between gerotranscendence and existential aspects of life still needs to be addressed.

Framework of Meaning in Life and Religiousness

In Tornstam's definition, gerotranscendence represents a frame of reference with respect to one's view of life. The

question addressed in the present study is whether this assumption can be substantiated by empirical research. The frame of reference with respect to one's view of life thus needs to be conceptualized and operationalized. Battista and Almond's (1973) work on meaning in life provides a suitable approach. These authors formulated the *relativistic perspective* on meaning in life. This theoretical perspective assesses the structural characteristics of individuals' process of believing rather than the content of their beliefs. In brief, Battista and Almond discerned the following four structural characteristics of meaning in life: (a) a positive commitment to some concept of meaning in life, (b) a framework of purpose in life or life view, (c) a sense of fulfillment, and (d) a feeling of significance. The framework dimension has been particularly well operationalized in the United States (Battista & Almond) and in The Netherlands (Debats, 1990), and it is relevant for examining whether a cosmic transcendent view is indeed related to a framework of meaning in life.

A second existential characteristic apt to be related to gerotranscendence is religiousness. Tornstam, working within an originally Lutheran and currently secularized context as in Protestant Europe (Inglehart & Baker, 2000), refrained from predictions about religion and gerotranscendence. In the Dutch study (Braam et al., 1998), Roman Catholics, but not Protestants, had higher cosmic transcendence scores than non-church members. In a small, non-random study among older adults from Belgium, Raes and Marcoen (2001) described higher scores on a longer version of the Cosmic Transcendence scale for Roman Catholics and for people who prayed, but not for regular church-goers. In the Ohio Longitudinal Study of Aging and Adaptation study cited in the previous section (Atchley, 1999), people who felt that being a religious person was important were significantly more likely to feel a greater connection with the universe than were people to whom religiousness was less important. These findings suggest that religiousness is conducive to cosmic transcendence. In addition, the cosmic transcendence items closely correspond to definitions of spirituality. For example, a sense of connectedness with the universe, other living beings, and generations is one of the three domains of Piedmont's Spiritual Transcendence Scale referred to as *universality* (Piedmont, 1999).

If the degree of cosmic transcendence differs between people who are and are not religiously involved, there is also the possibility that transcendent views are differently related to framework of meaning in life for people with and without a religious background. Especially for people who have been socialized in a religiously oriented environment, a lifelong connection might be expected between transcendent religious convictions and a framework of meaning in life. It is thus hypothesized that in later life, transcendent views in the context of a gerotranscendent development are likely to be more pronounced in relation to a framework of meaning in life for people who are embedded in a religious tradition than for those who are not or who are no longer religiously involved.

The present study addresses the following questions: (a) Is cosmic transcendence associated with the sense of a framework of meaning in life? If so, (b) is it more strongly pronounced in people who are religiously involved, and (c) does the association between cosmic transcendence and meaning in life depend on demographic characteristics?

METHODS

Participants

The current study is based on a secondary analysis of data collected in the course of a 6-year follow-up on the long-term adjustment of World War II survivors in The Netherlands. In 1992, a 5% sample of people born in 1920–1929 was randomly selected from the municipal population registers of nine Dutch cities (each with 85,000–700,000 residents; Bramsen & Van der Ploeg, 1999). The age range met two criteria: It included (a) people who were adolescents or young adults during World War II, and (b) a large group of Dutch veterans of World War II or of combat in the East Indies in 1947–1949. The baseline study consisted of a two-stage approach: Participants responded first to a brief postal screening questionnaire that was accompanied by informed consent, and second to a longer interview. The two-stage design took into account that the content of the interview was potentially emotional.

Of the 10,622 older participants initially approached, 4,057 returned a fully completed first brief questionnaire. Reasons for nonresponse were examined by sending an additional questionnaire to a sample of nonresponders ($N = 440$). The major reason for nonresponse (given by 51% of nonresponders) was that non-responders thought the questionnaire was not applicable to them. Of the 4,057 participants who returned a questionnaire, 2,189 agreed to participate in the longer interview, leading to a total of 1,461 fully completed interviews (31% did not respond to the mail questionnaire, and 3% of the questionnaires were not fully completed). Compared with the nonresponders, participants were better educated and reported more combat events, which accounted for the higher male-to-female ratio in the study sample (62%) than in the total sample (44%).

In 1998, follow-up questionnaires were mailed to the 1,275 subjects who were still alive and eligible to participate, 1,055 of whom responded (Dirkzwager, Bramsen, & van der Ploeg, 2001). Due to item nonresponse, complete data are available for only 928 participants.

The high dropout rate makes it uncertain whether figures on the prevalence of phenomena (e.g., cosmic transcendent ideas) can be extrapolated to the general population. It is, however, still possible to describe patterns of associations among the phenomena observed, which is also the major aim of the current study.

Measures

Cosmic transcendence.—The five items on cosmic transcendence were taken from Tornstam's (1997a) revised gerotranscendence scale. The translation of these items was compared with and checked against two translations of the original items from Swedish into Dutch by two colleagues who were not familiar with the current field of research. The translations needed only slight adjustment. Responses to the question "Do you recognize this?" were 0 (no!!), 1 (no), 2 (more or less), 3 (yes) and 4 (yes!!). The scale scores ranged from 0–20. Cronbach's α was .77; the mean interitem correlation was .39.

Framework of meaning in life.—Framework of meaning in life was assessed by using Debats's (1990) Dutch translation of

the Framework of Meaning in Life subscale of the Life Regard Index (Battista & Almond, 1973; hereafter "Framework scale"). The Framework scale was designed to assess the degree to which individuals can envision their lives within some meaningful perspective or dispose of a set of life goals or philosophy of life. A shortened 5-item version of the 14-item index was applied in the present study. Participants scored the answers on a 5-point Likert scale: 0 (totally disagree) to 4 (totally agree). The total Framework scale scores ranged from 0–20. The internal consistency of the scale was good (Cronbach's $\alpha = .83$; mean interitem correlation = .50).

Religiousness.—Aspects of religiousness included main religious affiliation, frequency of church attendance, and frequency of prayer. The following affiliations were distinguished: none, Protestant (mainly Calvinist denominations), Roman Catholic, and non-Christian religions. The last group ($n = 15$) consisted mainly of people of the Jewish faith ($n = 13$, or 1.4% of the total sample). The non-Christian category was excluded from further analyses because the size of this subgroup was too small for meaningful interpretations. The responses for the item on frequency of church attendance ranged from 0 (never) to 4 (once a week or more). Responses for the item on private prayer ranged from 0 (never) to 3 (daily or more).

Control variables.—Demographic variables included gender, age, marital status, and years of education. Because marital status served only as a control variable, the categories unmarried, divorced, and widowed were merged into the single category unmarried. Three indicators were selected as control variables for physical, mental, and social well-being.

Physical limitations were assessed according to the degree to which the participant felt incapacitated in daily activities by a chronic physical disease or handicap. Responses were 0 (no limitations), 1 (slightly limited), 2 (moderately limited), and 3 (severely limited).

Mental distress was assessed by using Koeter and Ormel's (1991) 12-item Dutch translation of the General Health Questionnaire (Goldberg, 1978). The internal consistency of the scale scores (range 0–36) in the current sample was high (Cronbach's $\alpha = .90$).

Perceived social support was assessed by using the Social Support Questionnaire (Revenson, Wollman, & Felton, 1983), which measures positive as well as negative social interactions. This 17-item questionnaire focuses on the amount of social support received during the past 7 days. Only the 8-item Positive Social Support subscale was used in the present study (e.g., receiving warmth and friendliness). Scores ranged from 0–24 (Cronbach's $\alpha = .85$).

Statistical Procedure

The constructs of cosmic transcendence and framework of meaning in life originate from different theories. However, because the items of both scales represent statements on aspects of life view, it was necessary to verify that the items of the scales did indeed pertain to different factors. For this reason, the first research question was initially addressed by using factor analysis based on principal axis factoring using oblique rotation

Table 1. Sample Characteristics ($N = 928$)

Variable	Range	<i>M</i>	<i>SD</i>	%
Age	67–82	73.1	2.9	
Gender				
Female				38.9
Male				61.1
Marital status				
Never married				10.0
Married				65.4
Divorced				5.5
Widowed				19.1
Education, years	8–19	12.3	3.3	
Physical limitations	0–3	0.9	1.0	
Mental distress	1–33	10.0	5.1	
Social support	0–24	12.6	4.4	
Religious affiliation				
Nonchurch members				40.2
Protestant				31.1
Roman Catholic				28.8
Church attendance	0–4	1.3	1.7	
Once a year or less (0)				59.2
Intermediate (1–3)				19.1
Once a week or more (4)				21.7
Frequency of prayer	0–3	1.3	1.4	
Never (0)				49.9
Occasionally (1–2)				13.0
Daily or more (3)				37.1
Cosmic transcendence	0–20	8.9	3.7	
Framework of meaning in life	0–20	13.0	3.3	

(Oblimin), without determining the number of factors beforehand.

Bivariate associations with the Framework scale and Cosmic Transcendence scale were computed by using Pearson correlations for all variables except the associations with religious affiliation, which are analyzed by using analyses of variance.

Next, the associations between the Framework scale and cosmic transcendence and the religious variables were also examined in multivariate models by using linear regression

analysis, including all control variables. The religious variables were expected to be highly intercorrelated, such that if they were included in one multivariate model, the tolerance values would possibly fall below .50. If necessary, separate regression models were carried out for the religious variables.

Interaction terms were computed between cosmic transcendence and the religious variables and included three separate equations in order to examine whether any of the religious variables modified possible associations between cosmic transcendence and framework of meaning in life. In order to avoid multicollinearity between first-order terms and product terms, product terms were formed by multiplying the centered (deviation from the mean) scores of both components (Aikin & West, 1991). The product terms between cosmic transcendence and each of the four demographic variables were analysed in the same way, again in separate models. The regression analyses were repeated for contrasting subcategories of the variables that significantly interacted with cosmic transcendence in its association with framework of meaning in life.

RESULTS

Sample Characteristics

Table 1 shows the characteristics of the sample. Male participants were somewhat overrepresented. The main religious affiliations (none, Protestant, and Catholic) were evenly distributed. The median score on the Cosmic Transcendence scale (range 0–20) was 9.0, indicating that, on average, somewhat less than half the sample agreed with the statements. The median score on the Framework scale (range 0–20) was 14.0, indicating that more than half of the sample agreed with the items.

Factor Analysis

Principal axis factoring of the items on the Framework scale and Cosmic Transcendence scale revealed two factors with eigenvalues of 3.21 and 1.37, accounting for 32.1% and 13.7% of the total variance, respectively. Table 2 shows the factor structure of the items, following oblique rotation. All 5 items on the Framework scale loaded on the first factor, with coefficients

Table 2. Framework of Meaning in Life and Cosmic Transcendence Scale Items: Distribution of Scores and Factor Structure Based on Principal Axis Factoring With Oblique Rotation ($N = 960$)

Item	Positive Answer ^a (%)	<i>M</i> ^b	<i>SD</i>	Factor Structure	
				I	II
I feel like I have found a really significant meaning in my life.	63.3	3.62	0.85	.782	.262
I have really come to terms with what is important in my life.	73.9	3.75	0.76	.572	.191
I have a philosophy of life that really gives my living significance.	58.5	3.50	0.92	.759	.302
I have a clear idea of what I'd like to do with my life.	62.0	3.57	0.81	.672	.238
I have a system or framework that allows me to truly understand my being alive.	58.9	3.48	0.95	.740	.325
I feel connected with the entire universe.	21.5	2.61	1.15	.218	.716
I can feel a strong presence of people who are elsewhere.	14.4	2.28	1.05	.154	.706
I feel a strong connection with earlier generations.	40.3	3.11	1.08	.315	.620
I feel I am part of everything alive.	58.2	3.50	0.97	.369	.565
Sometimes I feel like I live in the past and the present simultaneously.	14.9	2.37	1.00	.199	.543

Notes: Based on all the available data for items of both scales; mean age = 73.1 (range = 67–82), 62% male.

^aCosmic transcendence items: “yes” or “yes!!!”; framework of meaning in life items: “agree” or “totally agree.”

^bRange = 1–5.

Table 3. Bivariate Associations ($N = 928$)

Variable	Framework Scale (r)	Cosmic Transcendence Scale (r)
Age	-.01	.04
Female (vs male)	-.03	.10**
Education	-.04	-.01
Unmarried (vs married)	-.10**	.14***
Physical limitations	-.07	.07
Mental distress	-.23***	.05
Social support	.35***	.20***
Church attendance	.32***	.10**
Prayer	.29***	.16***
Cosmic transcendence	.32***	—
Religious affiliation	$F(2, 925) = 34.9$ ***	$F(2, 925) = 13.1$ ***
None	12.0 ^a	8.2 ^a
Protestant	13.5 ^a	9.3 ^a
Roman Catholic	14.0 ^a	9.5 ^a

^aMean scale scores.* $p < .05$; ** $p < .01$; *** $p < .001$.

of .572 up to .782. Similarly, all 5 items on the Cosmic Transcendence scale loaded on the second factor, with coefficients ranging between .543 and .716. The items of the Cosmic Transcendence scale did not have coefficients greater than .369 on the first (Framework scale) factor, and the items of the Framework scale did not have loadings greater than .325 on the second (Cosmic Transcendence scale) factor. Consequently, it is unlikely that the items fit into one underlying construct.

Bivariate Associations

Table 3 summarizes the results of bivariate analyses. There was a positive correlation of moderate strength between the Framework scale and cosmic transcendence. The associations between the Framework scale and religious variables were also positive and of moderate strength. In addition, Framework scale scores correlated substantially with mental distress and particularly with social support.

Cosmic Transcendence scale scores did not correlate with age, education, physical restrictions, or mental distress. Married participants had lower cosmic transcendence scores than unmarried ones. This especially pertained to the divorced and widowed participants (analyzed with additional pair-wise comparison of mean scores; results not shown). Cosmic Transcendence scale scores correlated positively with social support and with the religious variables.

Multivariate Associations

When included in one model, the tolerance values of church attendance and prayer fell below .50, so a separate analysis was necessary in which church attendance was replaced with prayer.

The prominent association between cosmic transcendence and the Framework scale from the bivariate analysis held after adjustment for demographics, health, mental distress, and social support (Table 4, Model 1a). The association between church attendance and Framework scale scores remained significant at the expense of the association with religious affiliation. The association between the frequency of prayer and Framework scale scores also remained statistically significant (Table 4, Model 2a). Furthermore, participants who were married and

Table 4. Standardized Regression Coefficients of Framework of Meaning in Life on Demographics, Health Variables, Cosmic Transcendence and Religious Variables Including Product Terms Between Cosmic Transcendence and Religious Variables ($N = 928$)

Variable	Model 1a	Model 1b	Model 1c	Model 2a	Model 2b
Age	-.04	-.04	-.03	-.03	-.03
Female	-.03	-.03	-.03	-.04	-.04
Education	-.08**	-.08**	-.08**	-.08**	-.08**
Unmarried (vs married)	-.10***	-.10***	-.11***	-.10***	-.10***
Physical limitations	-.01	-.01	-.01	-.01	-.01
Mental distress	-.21***	-.21***	-.21***	-.21***	-.20***
Social support	.23***	.22***	.22***	.24***	.24***
Cosmic transcendence	.27***	.27***	.28***	.26***	.26***
Protestant	.03	.02	.01	.03	.02
Roman Catholic	.07	.07*	.06	.09*	.08*
Protestant \times Cosmic transcendence		-.07*			
Roman Catholic \times Cosmic transcendence		-.09**			
Church attendance	.23***	.23***	.24***		
Church attendance \times Cosmic transcendence			-.09**		
Prayer				.19***	.20**
Prayer \times Cosmic transcendence					-.07**
Adjusted R^2	.31 ^a			.30 ^b	

^a $\Delta R^2 = .07$ for cosmic transcendence (when entered in last step); $\Delta R^2 = .07$ for religious affiliation and church attendance (when entered in last step).

^b $\Delta R^2 = .06$ for cosmic transcendence (when entered in last step); $\Delta R^2 = .05$ for religious affiliation and prayer (when entered in last step).

* $p < .05$; ** $p < .01$; *** $p < .001$.

those who were less educated had somewhat higher Framework scale scores. Fairly pronounced associations were observed for mental distress and social support: Low levels of mental distress and high levels of social support co-occurred with higher Framework scale scores.

Effect Modification by Religiousness and Demographics

The coefficients of the product terms of cosmic transcendence with religious affiliation, church attendance, and prayer were of similar size, had negative values, and were significant (Table 4, Models 1b, 1c, and 2b). The product term with church attendance had the highest coefficient. These results indicate that the religious variables had an attenuating effect on the association between cosmic transcendence and framework of meaning in life.

Significant interactions (not tabled) also emerged with gender ($\beta = .10$, $p < .001$), age ($\beta = .06$, $p = .045$), and marital status ($\beta = .11$, $p < .001$). No significant interaction was observed with years of education ($\beta = .02$, $p = .409$).

In order to illustrate the interactions, stratified multivariate analyses were repeated for contrasting subgroups of the religious variables (Table 5). A clear pattern evolved: The association between cosmic transcendence and framework of meaning in life was more pronounced for people who were less involved with religion. Among non-church members, the standardized coefficients of the association between cosmic transcendence and framework of meaning in life amounted to .37 ($p < .001$). Among non-church goers and among those who never prayed, a similar pronounced association was observed. However, the

Table 5. Standardized Regression Coefficients of Framework of Meaning in Life on Demographics, Health Variables, and Cosmic Transcendence: Stratified for Subgroups of Religious Variables

Variable	Church Member		Church Attendance ^a		Prayer ^a	
	No (n = 373)	Yes (n = 555)	Never (n = 549)	Weekly (n = 201)	Never (n = 463)	Daily (n = 344)
Age	-.03	-.05	-.05	.01	-.04	-.04
Female	-.10**	.03	-.05	-.03	.09*	.02
Education	-.16***	-.02	-.15***	.14	-.13**	.05
Unmarried (vs married)	-.17***	-.06	-.15***	.02	-.15**	.01
Physical limitations	.02	-.04	-.02	-.00	-.02	.00
Mental distress	-.21***	-.20***	-.24***	-.18*	-.19***	-.27***
Social support	.21***	.25***	.23***	.18**	.23***	.30***
Cosmic transcendence	.37***	.19***	.34***	.12	.35***	.19***
Church attendance	.12**	.25***				
R ² (adjusted)	.34	.23	.30	.08	.30	.20

^aReligious affiliation is not included in these models because of tolerance values below .50.

* $p < .05$; ** $p < .01$; *** $p < .001$.

association in the contrasting groups was approximately half as strong. Among people who went to church every week, the association did not even reach statistical significance.

Stratified multivariate analyses were also repeated for contrasting subgroups of gender, age, and marital status (Table 6). For women, the standardized coefficient for the association between cosmic transcendence and framework of meaning in life even reached the value of .39. For men, the association was less substantial. Among the participants younger than age 75, the association between cosmic transcendence and framework of meaning in life was evident. However, in participants aged 75 and older, the association was clearly more substantial. The strength of the association between cosmic transcendence and framework of meaning in life was more pronounced among widowed participants than among married ones.

DISCUSSION

The aim of the current study was to provide greater insight into the relationship between the cosmic dimension of gerotranscendence and a framework of meaning in life. Special attention was devoted to the possible reinforcing effects of religiousness, whereas possible modifying effects of demographic characteristics were also explored.

A prominent association emerged between cosmic transcendence and framework of meaning in life. This association persisted after multivariate control for demographics, physical health, mental distress, and perceived social support. Yet, the items of the Cosmic Transcendence scale and Framework scale loaded on separate scale factors. An unanticipated finding was that the association between cosmic transcendence and framework of meaning in life proved to be stronger among people who were *not* religiously involved. The association was also more pronounced among women, participants aged 75 or older, and participants who were widowed.

Table 6. Standardized Regression Coefficients of Framework of Meaning in Life on Demographics, Health Variables, and Cosmic Transcendence: Stratified for Demographic Subgroups

Variable	Gender		Age		Marital Status	
	Female (n = 361)	Male (n = 567)	67–74 (n = 612)	75–82 (n = 316)	Married (n = 607)	Widowed (n = 177)
Age	-.03	-.03	-.07*	-.01	-.07*	-.03
Female			-.01	-.08	-.06	.01
Education	-.06	-.10**	-.15***	.05	-.11**	-.16**
Unmarried (vs married)	-.10*	-.11**	-.13***	-.06		
Physical limitations	.04	-.04	-.03	.03	-.04	-.02
Mental distress	-.26**	-.16***	-.21***	-.20***	-.11**	-.36***
Social support	.10*	.30***	.22***	.22***	.30***	.19**
Cosmic transcendence	.39***	.18***	.23***	.33**	.19***	.33***
Protestant	.12*	-.03	.07	-.05	.01	.12
Roman Catholic	.13*	.04	.11*	-.01	.07	-.01
Church attendance	.21***	.23***	.19***	.29***	.21***	.26***
R ² (adjusted)	.38	.29	.31	.34	.26	.44

* $p < .05$; ** $p < .01$; *** $p < .001$.

The Framework scale proved to be the strongest correlate of the cosmic dimension of gerotranscendence described so far. Inasmuch as the theory of gerotranscendence states that gerotranscendence represents a view of life, the undeniably vague statements on the relativity of time, space, life and death, and generations are clearly associated with a frame of reference. As far as the relationship between existential aspects of life and cosmic transcendence is concerned, Raes and Marcoen (2001) described a similar finding based on their explorative study in Belgium. They discovered a similar, substantial association between their version of the Cosmic Transcendence scale and an attitude of acceptance towards death.

Perhaps cosmic transcendence should be categorized as an aspect of spirituality known as a sense of universality (Piedmont, 1999). Empirical studies of cosmic transcendence suggest that cosmic transcendence might coexist with other aspects of spirituality within a religious context, though it might also evolve outside of a religious tradition or persist after the religious tradition has been given up. Especially with regard to these secularized older adults, the current study arrives at a new insight, viewing cosmic transcendence as a remaining domain of contemplation with a more relevant contribution to meaning in life.

The fact that the association between cosmic transcendence and framework of meaning in life was strongest among women raises new questions. The finding bears some resemblance to the evidence that women possess higher levels of religiousness (Walter & Davie, 1998). Tornstam (1997a) described higher levels of cosmic transcendence among older women, which was also the case in the current study. However, as is noted above, the findings on the framework of meaning in life pertain largely to the non-religious. The gender difference therefore requires broader explanation. One suggestion could be that, throughout their lives, women are more responsive to issues of connectedness and to a sense of belonging. This notion might confirm the related finding that cosmic transcendence seems to be

a more relevant dimension of life for people who are widowed. Of the persons in the current sample who were widowed, 72% were women.

There were several other correlates of framework of meaning in life in the multivariate models as well: Cosmic transcendence, church attendance, social support, and low levels of mental distress contributed approximately equally to framework of meaning in life. Church attendance was more relevant to the framework of meaning in life than was religious affiliation.

It is still uncertain whether gerotranscendence is really age specific, or whether it is based on a life-long cognitive–psychological ability to foster transcendent views. The cosmic dimension of gerotranscendence is virtually identical to the above-mentioned sense of universality, one of the three facets of spiritual transcendence (Piedmont, 1999). Piedmont defined spiritual transcendence as the capacity of individuals to stand outside of their immediate sense of time and place and adopt a larger, more objective perspective, reflecting a fundamental unity underlying the forces of nature. The concept of spiritual transcendence was developed to complement the five-factor model of personality (Costa & McCrae, 2002), one of the major empirically based models of personality. Piedmont argued that spiritual transcendence differs from the other five personality domains in that it has a much longer developmental phase and is likely to continue to evolve during the course of the life span. In order to empirically detect this development, researchers must make comparisons with younger age groups. Tornstam (1997a) was able to demonstrate in a Swedish sample that included younger adults that cosmic transcendence correlated with age. However, in a sample of university staff members in California, aged 18–73 years, Levenson, Jennings, Aldwin, and Shiraishi (2005) could not substantiate an association between age and transcendent ideas about the self. Their 10-item scale included two cosmic transcendence and two ego transcendence items from Tornstam's first gerotranscendence scale. Cosmic transcendence did not correlate with age in the current study. Nevertheless, the impact of cosmic transcendence on framework of meaning in life was significantly more prominent among the older participants than among the younger ones. Tentatively, the current cross-sectional study indicates that with increasing age, cosmic transcendence seems to unfold as a more important domain in one's life view.

An important limitation of the present study is the high nonresponse rate. This was due to the ethically responsible strategy of approaching World War II survivors in The Netherlands in order to interview them about war traumas. An examination of the reasons for the nonresponse showed that the responders were more likely than the nonresponders to have been victims of war trauma. This type of selection may have affected the response pattern to questions on cosmic transcendence, because the theory of gerotranscendence suggests that levels of gerotranscendence are likely to be higher for people who have experienced stressful life events. The mean cosmic transcendence scores might thus be higher in the current study than they would have been if a more representative sample had been available. Nevertheless, the effect of slightly higher cosmic transcendence scores is possibly limited as regards the strength of associations examined in this study. For example, the bivariate association between cosmic transcendence and

a Roman Catholic background in the present study (when expressed as correlation: $r = .18$) is similar to that described in the previous Dutch Study ($r = .16$; Braam et al., 1998).

The theory of gerotranscendence has been criticized as an attempt to “re-enchant” aging (Jönson & Magnusson, 2001). Although empirical studies provide a basis for a better understanding of gerotranscendence, it is not clear whether gerotranscendence necessarily leads to higher levels of well-being or “enchants” aging at all. The current study provides an indication that cosmic transcendent views contribute to existential issues, especially in people who are no longer religiously involved or who never were. Although operationalizations of spirituality are manifold, it is recommended that future studies include several aspects of spirituality in order to explore whether transcendent views can be identified or mapped as a dimension of spiritual life, independent of the religious context. In Europe, secularization and deinstitutionalization cannot be overlooked as important social developments. Further gerontological studies on resources that reflect efforts to adapt (or at least contemplate a meaning in life) would therefore be useful in monitoring well-being and development in the older generation.

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REFERENCES

- Adams, K. B. (2001). Depressive symptoms, depletion, or developmental change? Withdrawal, apathy, and lack of vigor in the Geriatric Depression Scale. *The Gerontologist*, 41, 768–777.
- Aikin, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Atchley, R. C. (1997). Everyday mysticism: Spiritual development in later adulthood. *Journal of Adult Development*, 2, 123–134.
- Atchley, R. C. (1999). Goals for developmental direction. In *Continuity and adaptation in aging: Creating positive experiences* (pp. 133–146). Baltimore: Johns Hopkins University Press.
- Baltes, P. B., & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes & M. M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1–34). New York: Cambridge University Press.
- Battista, J., & Almond, R. (1973). The development of meaning in life. *Psychiatry*, 36, 409–427.
- Braam, A. W., Deeg, D. J. H., van Tilburg, T. G., Beekman, A. T. F., & van Tilburg, W. (1998). Gerotranscendence als levensperspectief: Een eerste empirische benadering bij ouderen in Nederland [Gerotranscendence as a life cycle perspective: A first empirical approach among older adults in The Netherlands]. *Tijdschrift voor Gerontologie en Geriatrie*, 29, 24–32.
- Bramsen, I., & van der Ploeg, H. M. (1999). Fifty years later: The long-term psychological adjustment of aging World War II survivors. *Acta Psychiatrica Scandinavica*, 100, 350–358.
- Costa, P. T., Jr., & McCrae, R. R. (2002). *Personality in adulthood: A five-factor theory perspective* (2nd ed.). New York: Guilford Press.
- Debats, D. L. (1990). The Life Regard Index: Reliability and validity. *Psychological Reports*, 67, 27–34.
- Dirkzwager, A. J. E., Bramsen, I., & van der Ploeg, H. M. (2001). The longitudinal course of PTSD symptoms among aging military veterans. *Journal of Nervous and Mental Disease*, 189, 846–853.
- Erikson, E. H., & Erikson, J. M. (1997). *The life cycle completed*. New York: Norton.
- Goldberg, D. (1978). *Manual of the General Health Questionnaire*. Windsor, United Kingdom: NFER.

- Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review*, 65, 19–51.
- Jönson, H., & Magnusson, J. A. (2001). A new age of old age? Gerotranscendence and the re-enchantment of aging. *Journal of Aging Studies*, 15, 317–331.
- Koeter, M. W. J., & Ormel, J. (1991). *General Health Questionnaire, Nederlandse bewerking: Handleiding* [General Health Questionnaire, Dutch edition: Manual]. Lisse, The Netherlands: Swets & Zeitlinger.
- Levenson, M. R., Jennings, P. A., Aldwin, C. M., & Shiraishi, R. W. (2005). Self-transcendence: Conceptualization and measurement. *International Journal of Aging and Human Development*, 60, 127–143.
- Piedmont, R. L. (1999). Does spirituality represent the sixth factor of personality? Spiritual transcendence and the five-factor model. *Journal of Personality*, 67, 985–1013.
- Raes, F., & Marcoen, A. (2001). Gerotranscendence in de tweede levenshelft: Een eerste empirische benadering in Vlaanderen [Gerotranscendence in the second half of life: A first empirical approach in Flanders]. *Tijdschrift voor Gerontologie en Geriatrie*, 32, 150–159.
- Revenson, T. A., Wollman, C. A., & Felton, B. J. (1983). Social supports as stress buffers for adult cancer patients. *Psychosomatic Medicine*, 45, 321–331.
- Ruth, J.-E., & Coleman, P. (1996). Personality and aging: Coping and management of the self in later life. In J. E. Birren & K. W. Schaie (Eds.), *Handbook of the psychology of aging* (4th ed., pp. 308–322). San Diego, CA: Academic Press.
- Tornstam, L. (1989). Gerotranscendence: A reformulation of the disengagement theory. *Aging*, 1, 55–63.
- Tornstam, L. (1992). The quo vadis of gerontology: On the scientific paradigm of gerontology. *The Gerontologist*, 32, 318–326.
- Tornstam, L. (1994). Gerotranscendence: A theoretical and empirical exploration. In L. E. Thomas & S. A. Eisenhandler (Eds.), *Aging and the religious dimension* (pp. 203–225). Westport, CT: Greenwood Press.
- Tornstam, L. (1997a). Gerotranscendence in a broad cross-sectional perspective. *Journal of Aging and Identity*, 2, 17–36.
- Tornstam, L. (1997b). Gerotranscendence: The contemplative dimension of aging. *Journal of Aging Studies*, 11, 143–154.
- Wadensten, B., & Carlsson, M. (2003). Theory-driven guidelines for practical care of older people, based on the theory of gerotranscendence. *Journal of Advanced Nursing*, 41, 462–470.
- Walter, T., & Davie, G. (1998). The religiosity of women in the modern West. *British Journal of Sociology*, 49, 640–660.

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