Journal of Gerontology: PSYCHOLOGICAL SCIENCES
2001, Vol. 56B, No. 6, P364–P373

The Personal Experience of Aging, Individual Resources, and Subjective Well-Being

Nardi Steverink,[1] Gerben J. Westerhof,[2] Christina Bode,[2] and Freya Dittmann-Kohli[2]

[1]Departments of Internal Medicine and Geriatrics, University of Groningen, The Netherlands.
[2]Department of Psychogerontology, University of Nijmegen, The Netherlands.

The personal experience of aging, the resources relevant to it, and the consequences for subjective well-being were investigated in a sample of 4034 Germans aged 40 to 85. The data revealed 3 dimensions of aging experiences as particularly relevant: (a) physical decline, (b) continuous growth, and (c) social loss. Not only being younger but also having better subjective health, higher income, less loneliness, higher education, and greater hope were negatively associated with physical decline and social loss and positively associated with continuous growth. The number of children participants had played no role. All three dimensions of the aging experience were also found to be related to both positive and negative affect and, with the exception of physical decline, to life satisfaction.

THE awareness of age and the experience of growing older are inherent components of the self for most people in their adult years (George, Mutran, & Pennybacker, 1980; Neugarten, 1968, 1969, 1979; Peters, 1971; Ryff, 1991). As self-conceptions are found to play an important role in behavior and adaptive outcomes (Bandura, 1986), this may also be assumed for the cognitions that an individual holds about his or her own aging process (Lerner & Busch-Rossnagel, 1981; Markus & Herzog, 1992; Ruth & Coleman, 1996). In this article, the personal experience of aging is investigated as well as the factors that relate to it, along with the question of whether and how cognitions concerning one's own aging relate to indicators of subjective well-being.

In both literary and philosophical works and in phenomenological studies, the varied nature of the personal aging experience has been extensively described (e.g., Beauvoir, 1970; Cicero, as in Baltes & Baltes, 1990; Cole & Gadow, 1986; Thompson, 1992). The empirical investigation of the personal experience of aging, however, is approached almost exclusively from the perspective of subjective age identification or age identity. *Subjective age identification* refers to just how old a person feels or the age group with which the individual identifies him- or herself (Barak & Stern, 1986; Baum & Boxley, 1983; Goldsmith & Heiens, 1992; Kastenbaum, Derbin, Sabatini, & Artt, 1972; Markides & Boldt, 1983; Ward, 1977). Rather than the personal experience of aging, however, the foregoing research is largely concerned with the personal experience of age.

Also, some studies exist that clearly relate to the concept of the personal experience of aging, but that take a somewhat different perspective. The work of Heckhausen and colleagues, for instance, focuses on personal and normative conceptions about adult developmental change in psychological attributes. It was found that different age groups perceive development across the life span as the coexistence of gains and losses, but also as an increasing risk of decline and a decreasing potential for growth (Heckhausen, Dixon, & Baltes, 1989; Heckhausen & Krueger, 1993). Another example is the work on possible selves of Markus and colleagues. *Possible selves* are representations of individuals' ideas of what they might become in the future (Cross & Markus, 1991; Markus & Nurius, 1986; Ryff, 1991). Possible selves are found to change across the life span, which may be interpreted as a component of the personal experience of aging.

Up until now, only a few studies have empirically examined the personal experience of aging framed in terms of aging. For instance, Keller, Leventhal, and Larson (1989) conducted in-depth interviews on the aging experience with 32 community-dwelling adults aged 50 to 80 years and identified five major categories of positive and negative experiences: (a) aging as a natural and gradual process without remarkable features, (b) aging as a period of life evaluation, philosophical reflection, or increased wisdom and maturity, (c) aging as a period of increased freedom, new interests, and fewer demands, (d) aging as a period associated with physical health difficulties or concerns about health, and (e) aging as a period of losses, both interpersonal and job related (Keller et al., 1989). Connidis (1989) also investigated the aging experience of 400 community-dwelling people older than the age of 65 by asking if they liked or disliked anything about being their age and if they had any worries about growing older. These people generally did not focus on the negative aspects of aging. When categorized into three groups of people holding a negative, a moderate, or a positive view of aging, however, those holding a negative view were older, in poorer health, and had fewer children than those holding a positive view. Compared with those holding a moderate view of aging, the people holding a negative view were also older, less financially secure, in poorer health, more likely to have never been married, and more likely to see aging as worse than expected (Connidis, 1989).

The present article has three basic aims: first, to investigate the personal experience of aging in such a manner that a wide range of aging conceptions relating to the different

domains of the individual's existence are considered; second, to identify those factors that appear to relate to the manner in which the personal process of aging is conceived. Actual age is obviously an important factor, but research has shown that other factors also play a role. Among these are subjective health, being married, income, and the number of children (Connidis, 1989). The third and final aim is to investigate whether and how the personal experience of aging—as a cognitive part of the aging self-concept—relates to adaptive outcomes, that is, indicators of subjective well-being. Several studies have shown a positive relationship between age identity (feeling younger) and measures of adjustment among older adults (e.g., George et al., 1980; Montepare & Lachman, 1989). Whether a similar relationship holds for the personal experience of aging and measures of adjustment is not as yet clear, however.

Three sets of expectations guided the empirical investigation. First, there are indications that the experience of aging concerns a number of different dimensions of life (Keller et al., 1989) and that it can be framed in both positive and negative terms (Connidis, 1989). These findings fit with the life span theoretical perspective on the multidimensionality and multidirectionality of development and aging (Baltes, 1987). We therefore hypothesized that the personal experience of aging would reflect different dimensions (be multidimensional), and it would be multidirectional in the sense that it would involve both positive and negative experiences. This kind of multidirectionality we refer to as *weak* multidirectionality, as opposed to *strong* multidirectionality, which is considered in the second set of hypotheses, below.

The second set of expectations guiding the present research concerns those factors that may play a role in the origin of personal conceptions of aging. Actual age is obviously an important factor, and strong multidirectionality would imply that, with increasing age, some aging experiences become more positive, whereas others become more negative (Baltes, 1987). However, in line with identified age-related changes in conceptions of aging (Connidis, 1989; Heckhausen et al., 1989) we hypothesized that strong multidirectionality would not obtain: With increasing age, the experience of aging will become less positive and more negative.

Next to age, other factors relating to individual circumstances or characteristics may also be implicated in the origin of personal conceptions of aging. Relevant factors can be derived from theories that postulate the importance of individual resources (physical and material, social, and psychological resources) for coping with life in general and the aging process in particular (Baltes & Lang, 1997; Steverink, Lindenberg, & Ormel, 1998). A stable and varied repertoire of resources allows people to not only acquire important goals, but also compensate for the losses that accompany the process of aging. The important physical and material resources for most people in middle and later adulthood are health and financial security: Adapting to the process of aging is generally easier when a person is healthy and without financial worries. The important social resources for most people in middle and later adulthood are having a spouse and children or family and close friends. The important psychological resources for most people in middle and later adulthood are not only their intellectual skills but also their beliefs about self-efficacy and personal agency or feelings of control. Still other resources may exist, but the resources mentioned here are among the most important ones for the majority of adult people. We therefore hypothesized that higher levels of resources will be related to feeling less negative and worried about growing older. That is, the person with more personal resources is better able to cope with life and the process of aging than is the person with less resources. We also hypothesized that the role of resources is stronger for the experience of aging than is actual age. On one hand, actual age is a rather "empty" variable simply reflecting the resources with which it correlates, such as health. On the other hand, actual age may be a very rough indicator of just how much time a person has to live and thereby clearly influences the experience of aging. Given that the amount of time left to live is rather uncertain for most adult people, however, it is hypothesized that the impact of actual age on the experience of aging will be relatively weaker than the impact of resources.

The final set of expectations concerns the generally supported positive relationship between younger age identity and adjustment (e.g., George et al., 1980; Montepare & Lachman, 1989). We do not attribute this positive relationship to denial of aging (Montepare & Lachman, 1989; Ward, 1977), however, but to a complex set of relations involving cognitions, behavior, and adaptive outcomes (Bandura, 1986; Markus & Herzog, 1992). To reach or maintain a state of well-being across the course of life, individuals must make decisions that enhance their well-being. Decisions of this kind pertain to not only the ability to set goals but also the ability to delay on the rewards of desired outcomes. For instance, regaining the ability to walk after knee surgery requires not only painful effort and exercise, but also the capacity to set a distant goal. The ability to keep such a long-term goal in mind requires not only a delay of gratification but also positive expectations with regard to future outcomes. Whereas a positive expectation (walking again) can further motivate decisions (exercise) that enhance one's well-being, a negative or pessimistic expectation will undermine one's motivation to do the painful exercises needed to walk again. The cognitions concerning one's own aging process can refer to already lived experiences but also to (generalized) expectations with regard to the process of aging in the future. The hypothesis is therefore that people with a positive view or expectation with regard to their aging process will be better able to make the "right" decisions and thus experience higher levels of subjective well-being than will people with a negative view. Put differently, people with a negative view or expectation with regard to their own aging process will be inclined to make the "wrong" decisions and thereby experience low levels of subjective well-being.

Methods

Participants

The participants ($n = 4838$) in the German Aging Survey (Dittmann-Kohli, Kohli, & Künemund, 1995) were between 40 and 85 years of age. They were identified through a na-

tional probability sampling of local authorities, both in East and West Germany and were stratified by age, gender, and living region (East or West Germany). The fieldwork was conducted during the first half of 1996. Fifty percent of those contacted ($N = 9613$) proved willing to participate ($n = 4838$). The participants were interviewed at home by trained interviewers and asked to complete a "drop-off" questionnaire after the interviewer left. The return rate for the questionnaire was 83.4% ($n = 4034$). Because most measures used for the present research were collected by means of the drop-off questionnaire, we decided to restrict the analysis to the respondents who completed this questionnaire. Although this final sample still is very large ($n = 4034$), it consists of less than half of the original sample, which may yield problems of generalizability. Therefore, to identify possible sample selections, we conducted a specific nonresponse analysis (Infas, 1997). First, the main characteristics of the people who refused to participate entirely were analyzed. It was found that more people refused to participate because of disability and illness in the highest age group of 70 to 85 years than in the other groups. Also, women generally refused to participate more often than men did (53% vs. 47%) and East Germans were slightly more willing to participate than West Germans were (56% vs. 48%). Second, a comparison was made between the participants who did return the questionnaire after being interviewed (the final sample; $n = 4034$) and those who did not return the questionnaire ($n = 804$). Results showed that this nonresponse group, compared with the final sample, contained slightly more women (50.4% vs. 48.8%) and somewhat more West Germans (71.4% vs. 66.1%). There were no differences regarding age. From these analyses it was concluded that, in interpreting the results, it should be kept in mind that the final sample contains a small overrepresentation of healthy people in the oldest age group (70 to 85 years), together with a small overrepresentation of East Germans and men. We return to the point of sample selection and generalizability in the Discussion. In Table 1, an overview of the main demographic characteristics of the sample can be found.

Table 1. Descriptive Characteristics of the Sample ($n = 4034$)

Characteristic	*n*	%
Age[a]		
40–54	1446	35.8
55–69	1475	36.6
70–85	1113	27.6
Gender		
Male	2065	51.2
Female	1969	48.8
Region		
West	2668	66.1
East	1366	33.9
Marital Status		
Married/spouse	3164	78.4
Widowed	499	12.4
Separated	211	5.2
Never married	160	4.0

[a]Mean age = 60.1 years ($SD = 12.2$).

Measures

The personal aging experience.—This concept was measured using an a priori set of 47 statements referring to both positive and negative aging experiences in such different life domains as health, social contacts, activities, personality, and so forth. All statements began with the phrase: "Aging means to me . . ." or ended with: ". . . has nothing to do with my age." (For an overview see Kohli & Dittmann-Kohli, 1996). Examples of the statements are: "Aging means to me . . . being less vital and fit" and "Just how well I can take care of myself has nothing to do with my age." Respondents had to indicate whether each statement was "completely true," "mostly true," "mostly not true," or "completely not true." The statements were formulated by members of the research group and were based on the results of two pilot studies in which personal meanings of aging were investigated by means of qualitative methods (Kohli & Dittmann-Kohli, 1996; see also Dittmann-Kohli, 1995). The resulting initial set of 47 statements was explored using a number of data-reduction techniques. Analyses revealed three convincing clusters of statements regarding the aging experience (see Results).

Physical and material resources.—Two indicators were used to measure physical and material resources: subjective health and income. Subjective health was measured by responding to the question "How do you assess your health at this moment?" with "very good," "good," "moderate," "bad" or "very bad." Income was assessed using equivalence income (Motel, 1998) translated into a 14-category classification system with the categories ranging from "less than 1000 German marks per month" (Category 1) to "more than 3400 German marks per month" (Category 14). Information about income was missing in 10.4% of the cases ($n = 418$).

Social resources.—Three measures were used to assess the availability of social resources. The first measure was "having a spouse," which was dichotomized as "being married or living together with a spouse" versus "being widowed, divorced, or never married." The second measure was the number of children, which ranged from "no children" (score = 0) to "five or more children" (score = 5). For the latter score, the number of children was summed, as only 3.6% of the respondents were found to have five or more children, with 2 respondents having the maximum of 10 children. Twelve percent of the respondents had no children. Finally, a measure of loneliness was added because the other two more objective measures of social resources need not correspond with their subjectively experienced quality. That is, loneliness can reflect the subjectively experienced lack of important social resources and was therefore measured by an 11-item loneliness scale (DeJong-Gierveld & Kamphuis, 1985). This scale has good psychometric properties and the internal consistency (Cronbach's α) for the present study was found to be .89.

Psychological resources.—We used two measures to assess the respondents' psychological resources: level of edu-

cation and hope. Education was measured with the three categories: low, middle, and high. Hope was measured in terms of personal agency, using an eight-item hope scale (Snyder et al., 1991), to indicate "a cognitive set that is composed of a reciprocally derived sense of successful (a) agency (goal-directed determination) and (b) pathways (planning of ways to meet goals)" (p. 570). For the present study, the internal consistency (Cronbach's α) of this scale was found to be .87.

Subjective well-being.—Subjective well-being was measured by means of both a cognitive (life satisfaction) and two affective (positive and negative affect) components. These are widely used indicators of subjective well-being (Diener, 1984; Diener, Suh, Lucas, & Smith, 1999). Life satisfaction was measured with the five-item scale, Satisfaction with Life (Pavot & Diener, 1993). This scale has good psychometric properties and the internal consistency coefficient for the present study was found to be .86. Positive and negative affect were measured using the Positive and Negative Affect Schedule, which consists of two scales of 10 items each (Watson, Clark, & Tellegen, 1988). The internal consistency coefficients for the present study were found to be .87, and .82, respectively, for each scale.

Statistical Procedures

The first set of hypotheses was tested using factor analysis and analysis of internal consistency. The second and third sets of hypotheses were tested using multiple regression analyses. To check for a risk of collinearity in the multiple regression analyses, we examined the intercorrelations between the variables. Inspection of Table 2 shows none of the correlations to exceed .54 or −.43, which can be considered acceptable.

Although no hypotheses were formulated with regard to gender and region, both variables were controlled for in the regression analyses. In light of the fact that the sample was stratified by age, gender, and region, moreover, part of the analyses were performed on weighted cases. Where relevant, the use of weighted cases is indicated. A final remark concerns the testing of the causal mechanisms formulated in the second and third set of hypotheses. It should be noted that such testing essentially requires a longitudinal design. However, we believe that important initial insights can be gained from cross-sectional analyses, guided by clear theoretical assumptions. Nevertheless, the results should be interpreted with caution.

Results

In the first set of hypotheses, we stated that the personal experience of aging would be characterized by multidimensionality and (weak) multidirectionality. These hypotheses were tested using different steps of factor analysis and data-reduction techniques. In the first step of the exploratory factor analysis, all 47 statements were analyzed by means of principal component analysis with Varimax rotation. This revealed eight factors with eigenvalues greater than 1.0 to explain a total of 49.2% of the variance when considered together. However, the largest part of the variance (35%) was explained by the first three factors (with eigenvalues of 9.2, 4.8, and 2.4 respectively). The remaining five factors each explained only 3% to 2% of the variance (and had eigenvalues between 1.7 and 1.1).

In light of these findings, we decided to carry out another factor analysis with a three-factor solution. This analysis revealed a first factor with 17 items, a second with 13 items, and a third with 10 items (only items with loadings greater than .40 were considered). The first factor contained negatively formulated items with very diverse content. The second factor, in contrast, contained a diversity of positive items. All of the items on the first and second factors also started with the phrase, "Aging means to me . . . ". The third factor contained a mixture of items with 6 of the 10 items ending with the alternative phrase: ". . . has nothing to do with my age." This finding led us to conclude that the items on the third factor were less convincing, and we decided to continue the analyses with only the items from the first and second factors with loadings of at least .40 (30 items).

Table 2. Pearson Correlations Between all Variables (Weighted Cases)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age															
2. Gender (0 = male)	.09**														
3. Region (0 = West)	−.03	.01													
4. Spouse (0 = none)	−.31**	−.21**	−.01												
5. Number of children	.07**	.04*	.05**	.15**											
6. Income	−.03	−.03*	−.20**	−.04*	−.25**										
7. Education	−.31**	−.17**	.20**	.12**	−.10**	.29**									
8. Subjective health	−.28**	−.03*	−.03*	.12**	−.04*	.15**	.20**								
9. Loneliness	.06**	−.03	.01	−.22**	−.07**	−.03	−.07**	−.19**							
10. Hope	−.08**	−.07**	−.03*	.12**	.01	.12**	.12**	.23**	−.31**						
11. Life satisfaction	.04**	.04*	−.14**	.16**	.03	.18**	.04**	.28**	−.39**	.50**					
12. Positive affect	−.22**	−.00	−.06**	.12**	−.03	.16**	.19**	.28**	−.32**	.52**	.33**				
13. Negative affect	−.15**	.12**	.00	.01	.01	−.03	.03	−.15**	.30**	−.30**	−.30**	−.14**			
14. Physical decline	.31**	.03	.03	−.10**	.02	−.11**	−.17**	−.43**	.17**	−.21**	−.16**	−.33**	.17**		
15. Social loss	.18**	.03	.05**	−.20**	−.02	−.14**	−.17**	−.26**	.35**	−.38**	−.31**	−.41**	.26**	.37**	
16. Continuous growth	−.35**	.00	−.04*	.14**	−.02	.15**	.24**	.32**	−.23**	.54**	.32**	.53**	−.11**	−.37**	−.41**

*$p < .05$. **$p < .01$.

As not only weak multidirectionality (positive and negative experiences), but also multidimensionality were expected to characterize the personal experience of aging, we decided to subject the 30 items selected on the basis of the previous analysis to another factor analysis. The result was five factors with eigenvalues of 7.1, 3.6, 1.9, 1.2, and 1.1, respectively, explaining 49.6% of the variance when considered together. The first factor contained seven items (with loadings >.40); all of the items referred to the aging experience of physical decline and problems of coping, with the exception of one item, which was then removed. The second factor also contained seven items (>.40) reflecting the positive aging experience of continued personal development, expansion, and new experiences. The third factor contained four items (>.40) referring to losses in the social domain. The fourth factor revealed three items (>.40) with the positive experiences of compensation ability, control, and self-knowledge. Finally, the fifth factor contained six varied items referring to alienation, negative personality characteristics, dissatisfaction, and curiosity about the future.

To determine whether each factor represented a meaningful and coherent dimension of the aging experience, to use as separate scales in the further analyses, we further analyzed each factor with respect to internal consistency. An internal consistency coefficient (Cronbach's α) of at least .70 and meaningful content were taken as the criteria for acceptance.

The results of this analysis revealed the following. The six items from the first factor showed an internal consistency coefficient (Cronbach's α) of .82. The seven items from the second factor showed an internal consistency coefficient of .81. The four items from the third factor revealed a Cronbach's alpha of .77 and the three items from the fourth factor and the six items from the fifth factor revealed coefficients of .69 and .65, respectively.

According to the criteria, the fourth and fifth factors were unacceptable. The internal consistency of the fourth factor could not be increased because this factor had only three items. It was therefore decided to remove the items. Similarly, deletion of one or two of the items from the fifth factor did not increase the internal consistency of this factor, so it was also decided to remove these items. This led to a final set of three factors.

Before performing further analyses, we decided to delete two more items from the first factor. Both of the items loaded considerably smaller than the other items on this factor, and one of the items was considered vague with regard to content (it focused on coping with life in general). The resulting factor or dimension could be labeled as *aging experiences of physical decline*. An additional item was similarly deleted from the second factor because it showed a somewhat weaker loading than the other items. This factor or dimension could be labeled as *aging experiences of continuous growth*. Inspection of the third factor showed no reason for change, so the four items loading on it were retained. The third factor or dimension could be labeled as *aging experiences of social loss*.

It was next observed that the first and third factors each contained four items, whereas the second factor contained six items. For purposes of comparison, we deemed it desirable to have the same number of items on each factor, and we therefore considered restriction of the second factor to four items. Reduction of the second factor to four items did not appear to damage the meaningfulness or internal consistency of the factor; only a slight change in the internal consistency of the items was observed after the omission of two items (from $\alpha = .81$ to $\alpha = .78$). In Table 3, the final results of the factor analysis and the internal consistency of the items are summarized.

As can be seen, all of the items load high on the factor they belong to and low on the other two factors. The total amount of variance explained by the three factors adds to 60.5%. The internal consistency coefficients (Cronbach's α) for the three factors were found to be .79, .78, and .77, which can be considered satisfactory.

The conclusion is that the subjective experience of aging is both multidimensional and multidirectional, with the latter implying the coexistence of both negative and positive experiences (i.e., weak multidirectionality). The multidimensionality of the aging experience can be seen to pertain to the physical-, social-, and personal-development domains of life.

In the second set of hypotheses we stated, first, that age would have an influence on the personal experience of aging such that strong multidirectionality would not obtain: With increasing age, the experience of aging becomes less positive and more negative. The results regarding this hypothesis show the following. All three factors or dimensions of the aging experience are found to correlate significantly with age in the expected direction ($p < .01$). Whereas the dimensions of physical decline and continuous growth produced age correlations of $r = .31$ and $r = -.35$, respectively, the dimension of social loss revealed an age correla-

Table 3. Items, Factor Loadings, Explained Variance, and Internal Consistency

	Factors		
Item (Aging means to me . . .)	I PD	II CG	III SL
. . . Being less energetic and fit	*.76*	−.19	.14
. . . That my health declines	*.78*	−.17	.14
. . . That I have less physical endurance	*.71*	−.14	.10
. . . That I am less able to handle physical declines	*.78*	−.05	.14
. . . That others don't need me so much anymore	.19	−.21	*.71*
. . . That I feel lonely more often	.12	−.20	*.77*
. . . That I am less respected by others	.14	−.05	*.72*
. . . That I get bored more frequently	.07	−.14	*.75*
. . . Becoming more and more competent	−.14	*.73*	−.03
. . . That I retain the ability to learn new things	−.16	*.75*	−.15
. . . That I continue to make plans	−.11	*.77*	−.21
. . . That I remain able to put many ideas into action	−.14	*.75*	−.22
Explained variance (%)	20.4	20.3	19.8
Internal consistency (Cronbach's α)	.79	.78	.77

Notes: Respondents had to indicate the degree to which they considered each statement to be: 1 = *completely true*, 2 = *mostly true*, 3 = *mostly not true*, 4 = *completely not true*. Factor loadings are based on principal component analysis with Varimax rotation. Factor loadings in italics indicate which items are the high factor loadings for each factor. PD = physical decline; CG = continuous growth; SL = social loss.

tion of $r = .18$. To check the linearity of these relationships, we compared the mean scores for the six age groups (40–46, 47–54, 55–61, 62–69, 70–76, and 77–85 years) on each dimension. A clear linear relationship with age was found for each of the three dimensions of the personal experience of aging (weighted cases). Both the negative dimensions (physical decline and social loss) show that the older one is, the more the aging experience is framed either in terms of physical decline, $F(3895,5) = 83.35$, $p < .001$, or in terms of social loss, $F(3944,5) = 35.58$, $p < .001$. The dimension of continuous growth shows the process of aging to be experienced as less of a process of continuous growth with increasing age, $F(3846,5) = 124.01$, $p < .001$.

In Table 4, the results pertaining to the other hypotheses of the second set of hypotheses are shown. It was stated that individuals with higher levels of resources could be expected to be generally less negative and feel more positive about growing older than would individuals with lower levels of resources. Also, although actual age is expected to have an independent influence on the personal experience of aging, the influence of resources was expected to be greater. We performed separate regression analyses with the three dimensions of the personal experience of aging as the dependent variables. All three models are shown in Table 4, each model containing two submodels. Each first submodel includes only age; each second submodel also includes the following resources: subjective health, income, having a spouse, number of children, loneliness, education, and hope. Also, gender and living region in Germany (West or East) were added to each second submodel to allow us to examine the possible influence of these variables.

Table 4. Regression Analyses for the Three Dimensions of the Aging Experience

	Physical decline		Continuous growth		Social loss	
Variable	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Age	.32***	.21***	−.38***	−.27***	.20***	.09***
Physical/Material Resources						
Subjective health		−.34***		.12**		−.10***
Income		−.04**		.03*		−.08***
Social Resources						
Spouse (0 = none)		.03		−.00		−.11***
Number of children		−.02		.00		−.01
Loneliness		.07**		−.04**		.26***
Psychological Resources						
Education		−.03		.10***		−.05**
Hope		−.08***		.46***		−.22***
Gender (0 = male)		−.01		.06***		−.04**
Region (0 = West)		.03		−.04**		.03
R^2 (adj.)	.103	.257	.142	.433	.042	.271
N		3377		3349		3392

Note: Only standardized coefficients are shown.
*$p < .05$. **$p < .01$. ***$p < .001$.

The results in Table 4 again show age to significantly influence all three dimensions of the aging experience. Significant influences of the resources of subjective health, income, loneliness, and hope were also found for the three dimensions of the aging experience. We found that better subjective health, a higher income, less loneliness, and stronger hope contributed to the experience of less physical decline, more continuous growth, and less social loss. Two of the resources (i.e., having a spouse and education) differentially contributed to the experience of aging. People with a spouse experienced aging as less of a social loss than did people without a spouse. With respect to both the physical decline and the continuous growth dimensions of the aging experience, having a spouse surprisingly exerted no influence.

The resource of education also relates differentially to the three dimensions of the aging experience. A higher educational level relates to the experience of aging as less of a social loss, and more as an opportunity for continuous growth. The relation to physical decline was nonsignificant, however. A higher educational level does not, thus, seem to protect an individual from experiencing aging as physical decline. Finally, one of the resources considered here—number of children—did not influence any dimension of the aging experience, which is certainly unexpected and is considered in further detail in the Discussion.

Comparison of the standardized regression coefficients (β) for each second model shows only a few of the resources playing a stronger role in how people experience the aging process than actual age. The aging experience of physical decline appears to be better predicted by subjective health than by actual age. The aging experience of continuous growth appears to be better predicted by hope than by actual age. Additionally, the aging experience of social loss appears to be better predicted by loneliness and hope than by actual age. These findings lead us to conclude that age is a relatively strong and independent determinant of just how the process of aging is experienced. Only a few resources (or lack of them) appear to affect the aging experience more than actual age.

With respect to gender, it is remarkable that it does not relate to the experience of aging as physical decline but does relate to the experience of aging as both social loss and an opportunity for continuous growth. Men and women apparently do not differ with respect to the experience of aging as physical decline, whereas men tend to feel greater social loss as a result of aging than women, and women experience more continuous growth than men.

With respect to region of living, it is interesting to note that East Germans seem to experience the aging process as less of an opportunity for continuous growth than do West Germans, although they do not differ with respect to the experiences of physical decline and social loss. This finding is hard to interpret but, in light of the fact that the influences of income and health have been taken into consideration, it may simply indicate a more general lack of opportunities for continuous growth in East Germany relative to West Germany.

The third set of hypotheses in the present study concerned the influence of the different dimensions of the personal ex-

perience of aging on measures of subjective well-being (i.e., life satisfaction, positive affect, and negative affect). Note here that, although the rationale for the relationship between (different dimensions of) the aging experience and indicators of subjective well-being is based on the hypothesized intermediate mechanism of "making the right decisions" (linking positive cognitions to adaptive outcomes and negative cognitions to maladaptive outcomes), this intermediate step could not be measured with the available data. Nevertheless, we deemed it acceptable to interpret the empirically found relationships—if supported—as such.

The results of separate regression analyses with the three measures of subjective well-being as the dependent variables are presented in Table 5. Again, each model consists of two submodels. Each first submodel contains age, resources, gender, and region as independent variables. Each second submodel also includes the three dimensions of the personal aging experience.

Inspection of Table 5 first reveals the often-found positive relationship between age and life satisfaction and the fact that age is negatively related to both positive and negative affect. Next, we found the three dimensions of the personal experience of aging significantly related to at least two of the three indicators of subjective well-being. The experience of aging as physical decline relates to both positive and negative affect (as expected) but not to life satisfaction (which was unexpected). The experience of aging as continuous growth positively relates to life satisfaction and positive affect (as expected) but also to stronger feelings of negative affect (which was unexpected). This deviant coefficient is hard to interpret, a point to which we return in the Discussion. Finally, the experience of aging as social loss relates in the expected direction to all three indicators of subjective well-being. Feelings of social loss as a result of aging lead to decreased life satisfaction, decreased positive affect, and increased feelings of negative affect.

In general, it may be concluded that the third set of hypotheses is largely supported by the data. The way in which people experience their own aging process independently affects how they feel in terms of both life satisfaction and positive or negative affect. Comparison of the standardized coefficients (β) for the three dimensions of the personal aging experience together with the increase in the amount of explained variance, however, shows the impact of various aspects of the experience on life satisfaction to be very small, the impact on positive affect to be particularly due to the experience of continuous growth, and the impact on negative affect to be mainly a matter of physical decline and social loss.

Discussion

In this study, we investigated how people in the second half of life experience their personal aging process, the factors associated with the way in which they perceive their aging, and, finally, how their perceptions of the personal aging process relate to indicators of subjective well-being. A number of hypotheses were formulated and tested in a sample of 4034 Germans aged 40 to 85.

The findings primarily showed the personal experience of aging to be a multidimensional phenomenon. Three different dimensions of aging experiences were found. The first dimension relates to physical decline, such as the loss of vitality and health. The second dimension relates to continuous growth and personal development. The third dimension relates to losses in the social domain, such as no longer being needed by others or decreased respect from others. The three dimensions of the aging experience found here are largely in line with the findings of a study by Keller and colleagues (1989), who identified two additional dimensions:

Table 5. Regression Analyses for Life Satisfaction, Positive Affect, and Negative Affect

	Life satisfaction		Positive affect		Negative affect	
Variable	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Age	.17***	.19***	−.15***	−.06***	−.19***	−.21***
Physical/material resources						
Subjective health	.18***	.18***	.09***	.03	−.12***	−.07***
Income	.14***	.13***	.06***	.04*	−.01	.00
Social resources						
Spouse (0 = none)	.11***	.11***	−.01	−.02	.08***	.09***
Number of children	.03*	.03*	−.02	−.02	.04*	.04*
Loneliness	−.20***	−.19***	−.14***	−.09***	.24***	.19***
Psychological resources						
Education	−.04**	−.05**	.08***	.05**	.06***	.06***
Hope	.38***	.34***	.42***	.28***	−.21***	−.20***
Gender (0 = male)	.07***	.06***	.04**	.02	.13***	.14***
Region (0 = West)	−.09***	−.08***	−.06***	−.05**	−.03*	−.04*
Personal aging experience						
Physical decline		.01		−.08***		.13***
Continuous growth		.06***		.23***		.08***
Social loss		−.04**		−.11***		.15***
R^2 (adj.)	.396	.399	.344	.398	.198	.232
N		3263		3180		3195

Note: Only standardized coefficients are shown.
*$p < .05$. **$p < .01$. ***$p < .001$.

Aging as a natural and gradual process with little or no remarkable features and aging as a period of life evaluation, philosophical reflection, and increased wisdom. Although our data initially also revealed more than three dimensions (see Results), only three dimensions could be interpreted unambiguously while at the same being internally consistent scales. The fact that Keller and colleagues (1989) reported on more than three dimensions may lie in their use of open-ended questions to tap the subjective experience of aging. Such a qualitative procedure (but only in 32 adults aged 50 to 80) may yield results that are hard to replicate in a large quantitative and statistically controlled study. Conversely, the set of statements used in our study may have been insufficient in content and/or number to identify other statistically significant dimensions. Further research should take these points into consideration.

A second finding concerns the multidirectionality of the aging experience, which, on the one hand, is reflected by the fact that both positive (growth) and negative (loss and decline) experiences characterize the personal experience of aging (i.e., weak multidirectionality). On the other hand, we found, as expected, that strong multidirectionality of aging experiences does not obtain: With increasing age, the aging experience is increasingly framed in terms of physical decline or social loss and less in terms of continuous growth.

A third major finding in the present study is that, next to age, a substantial number of the resources were significantly related to each of the three dimensions of the aging experience. Adults with better subjective health, a higher income, less loneliness, a higher educational level, and stronger hope experience the process of aging less in terms of physical decline and social losses and more in terms of continuous growth. Only two of the resources examined in our research did not relate to the experience of aging in the manner expected. People with fewer children were found to hold a more negative view of aging than were people with more children in a study by Connidis (1989), whereas our data showed no differences. One explanation for this may lie in the fact that our study covered the range of 40 to 85 years, whereas the study by Connidis involved only adults over the age of 65 years. Younger participants are possibly less aware of how dependent they can become on their children when they age. Nevertheless, it may also be the case that it is not so much the number of children that is important for feeling more or less worried about one's own aging process, but having any children (versus having no children). Moreover, having children as a continuous variable may contain the risk of curvilinearity. To check these possibilities, we also executed all regression analyses with having children as a dichotomous variable. This, however, did not yield other results. Another possible explanation may still be that it is not so much the number of children that is important, but the quality of the relationship with one's children. As we also considered the perceived quality of one's social relations (including children) indirectly through the level of loneliness, the possible influence of number of children may have been masked by the significant relationship of loneliness to all three dimensions of the aging experience.

The other resource not relating to the experience of aging in the manner expected was having a spouse. In the study by Connidis (1989), the people holding a negative view of aging were more likely to have never been married; in our study, the people less likely to experience aging as a social loss were married. However, having (or not having) a spouse did not relate to experiencing the process of aging in terms of physical decline or continuous growth. It seems that the implications of having (or not having) a spouse for one's experience of aging primarily refer to the social domain. This finding can be interpreted as a differentiation of the finding of Connidis (1989) and shows the importance of investigating the aging experience not only in positive or negative terms, but also in different dimensions.

In addition to several resources, actual age was found to influence the three dimensions of the aging experience rather strongly, which was not quite as expected. The influence of age on the different dimensions of the aging experience appeared to be sometimes equal but often stronger than most of the resources examined. The higher the age, the more inclined the people were to frame the aging process in terms of physical decline and social loss and less in terms of continuous growth, regardless of most of their resources. Only three resources appeared to have a stronger impact on the dimensions of the aging experience than actual age. First, subjective health influenced the aging experience of physical decline more than actual age did. This means that actually feeling less healthy and not so much being older leads one to experience the process of aging in terms of physical decline. Also, the experience of aging in terms of continuous growth appears to depend more on a higher level of hope than on being younger. Finally, the experience of aging in terms of social loss seems to be triggered by loneliness and a low level of hope rather than by simply being older. The findings regarding these three resources partly support our hypothesis that the impact of resources on the personal aging experience would be stronger than actual age. Besides, it shows that evaluation of these three resources in particular is associated with the personal process of aging. Here it should be noted also that there may be a difference between actual resources such as income, spouse, and education, and perceived resources such as subjective health, loneliness, and hope, when relating them to the different dimensions of the aging experience. Perceived resources may have a different relationship to the three dimensions of aging experiences than do actual resources, because both perceived resources and aging experiences are measured as subjective evaluations (i.e., perception), whereas actual resources are measured as objective facts. What remains to be seen, however, is whether such evaluations are based on real experiences or on misconceptions about aging. For instance, people can be lonely because they lack companionship and not because of their age. Still, they may be inclined to attribute this experience to the aging process.

Also the finding that age still exerts a relatively strong independent influence on the personal experience of aging after all resources (including health, loneliness, and hope) were controlled for is intriguing. To examine whether stepwise multiple regression analyses would yield more insight into the separate impact of age and the different resources, we also executed all regression models using stepwise methods. This, however, did not change the results. The rel-

atively strong influence of age may also suggest that, although they were asked about their personal experience of aging, people may still be inclined to intermingle personal experiences of aging with normative (i.e., more negative and less positive) expectations. Normative expectations are associated with actual age. Therefore, even when the influence of other important factors (i.e., resources) has been controlled for, actual age may still have a relatively strong impact on the personal experience of aging through internalized normative expectations with regard to aging. These findings are intriguing and in need of further research, particularly when it is realized that misconceptions about aging may lead to unnecessary worries about the process and may ultimately have a negative impact on the quality of life (see also Neikrug, 1998).

Our results regarding the relations between the personal experience of aging and measures of subjective well-being (i.e., life satisfaction, positive affect, negative affect) also point to the negative effect of misconceptions about aging on quality of life. All three measures of subjective well-being were found to be substantially influenced by at least two of the three dimensions of the aging experience. Only two effects deviated from the expected pattern of results. First, experiences of physical decline do not appear to influence life satisfaction although they do relate to both positive and negative affect. This finding may be due to the fact that life satisfaction was measured in terms of overall satisfaction with one's life. Moreover, experiences of physical decline may be seen as trivial and generally accepted as a normal part of the aging process. Positive and negative affect, however, are more state measures and thus, perhaps, more sensitive to feelings of physical decline. Nevertheless, it remains intriguing that experiences of social loss and continuous growth, which indeed relate significantly to life satisfaction, apparently are not considered trivial or simply part of the aging process. The other unexpected finding was the positive relationship between the experience of aging as continuous growth and feelings of negative affect. This may be due in part to the positive correlation between positive and negative affect ($r = .14$, see Table 2). Another explanation, however, is that people who experience aging in terms of continuous growth are open to new opportunities, which may sometimes yield positive experiences and sometimes negative ones. Further research is needed to elucidate these findings.

Three final points for discussion and future research should be mentioned. The first concerns the relatively large nonresponse this study encountered and its consequences for interpreting the results. Although such a rate of nonresponse is common in large-scale population surveys, it urges researchers to be cautious when generalizing the results to the German population. On the other hand it may be argued that, because the main sample biases could be identified (see Methods section), it is known at what points the generalizability is limited. Moreover, as this article also aimed at elaborating theoretical issues and model building, the study is deemed interesting for that purpose as well.

The second point concerns causality. The direction of causality for a number of the relations observed in the present, cross-sectional, research can only be determined on the basis of longitudinal data. Nevertheless, as a first attempt to shed some light on the personal experience of aging and the factors particularly relevant to it, a cross-sectional design can provide some useful insights, particularly when the analyses of the cross-sectional data are guided by specific theoretical considerations. Moreover, some useful insights for further (longitudinal) examination may be gained in such a manner.

The last point for consideration in future research is whether other resources or particular personality characteristics such as optimism may play a role in people's cognitions about their own aging process. The substantial amount of variance left unexplained in the present analyses suggest such a possibility.

It may be concluded that the personal experience of aging encompasses more than just a particular age identity. The personal experience of aging has a number of different dimensions and includes both negative and positive experiences. Furthermore, the personal experience of aging seems to play a role in just how happy people may feel in terms of the degrees of both positive and negative affect. The present findings may contribute to our knowledge of the personal experience of aging and may help identify those people at risk for developing a particular negative view of the process of aging. Such information can also be used to develop interventions aimed at a more positive aging experience and greater subjective well-being in later life.

Acknowledgments

This research was conducted within the context of the "German Aging Survey" (Deutscher Alters-Survey), which is a collaborative project between the Department of Sociology (Martin Kohli), Free University of Berlin, Germany, and the Department of Psychogerontology (Freya Dittmann-Kohli), University of Nijmegen, The Netherlands. The study was financed by the German Federal Ministry of Family Affairs, Senior Citizens, Women, and Youth, Grant 314-1720-317. Sample selection and data collection were carried out by the Institute for Social Research, Bonn, Germany.

Address correspondence to Nardi Steverink, Departments of Internal Medicine and Geriatrics, University of Groningen, University Hospital, P.O. Box 30.001, NL-9700 RB, Groningen, The Netherlands. E-mail: n.steverink@int.azg.nl

References

Baltes, P. B. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology, 23*, 611–626.

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: Perspective from the behavioral sciences* (pp. 1–34). New York: Cambridge University Press.

Baltes, M. M., & Lang, F. R. (1997). Everyday functioning and successful aging: The impact of resources. *Psychology and Aging*, *12*, 433–443.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice Hall.

Barak, B., & Stern, B. (1986). Subjective age correlates: A research note. *The Gerontologist, 26*, 571–578.

Baum, K. K., & Boxley, R. L. (1983). Age identification in the elderly. *The Gerontologist, 23*, 532–537.

Beauvoir, S. (1970). *La vieillesse* [Old age]. Paris: Editions Gallimard.

Cole, T. R., & Gadow, S. D. (Eds.). (1986). *What does it mean to grow old?* Durham, NC: Duke University Press.

Connidis, I. (1989). The subjective experience of aging: Correlates of divergent views. *Canadian Journal on Aging, 8*, 7–18.

Cross, S., & Markus, H. (1991). Possible selves across the life span. *Human Development, 34*, 230–255.

DeJong-Gierveld, J., & Kamphuis, F. (1985). The development of a Rasch-type loneliness scale. *Applied Psychological Measurement, 9*, 289–299.
Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542–575.
Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*, 276–302.
Dittmann-Kohli, F. (1995). *Das persönliche Sinnsystem.* [The personal meaning system]. Göttingen, Germany: Hogrefe-Verlag.
Dittmann-Kohli, F., Kohli, M., & Künemund, H. (1995). *Lebenszusammenhänge, Selbstkonzepte und Lebensentwürfe: Die Konzeption des Deutschen Alters-Survey* [Life coherence, self-concept and life design: The conceptualization of the German Aging Survey]. Berlin, Germany: Freie Universität.
George, L. K., Mutran, E. J., & Pennybacker, M. R. (1980). The meaning and measurement of age identity. *Experimental Aging Research, 6*, 283–298.
Goldsmith, R. E., & Heiens, R. A. (1992). Subjective age: A test of five hypotheses. *The Gerontologist, 32*, 312–317.
Heckhausen, J., Dixon, R. A., & Baltes, P. B. (1989). Gains and losses in development throughout adulthood as perceived by different adult age groups. *Developmental Psychology, 25*, 109–121.
Heckhausen, J., & Krueger, J. (1993). Developmental expectations for the self and most other people: Age grading in three functions of social comparison. *Developmental Psychology, 29*, 539–548.
Infas. (1997). *Deutscher Alters-Survey: Methodenbericht zur Erhebung der ersten Welle* [German Aging Survey: Methods report of the first wave]. Bonn, Germany: Infas-Sozialforschung.
Kastenbaum, R., Derbin, V., Sabatini, P., & Artt, S. (1972). "The ages of me": Toward personal and interpersonal definitions of functional aging. *Aging and Human Development, 3*, 197–211.
Keller, M. L., Leventhal, E. A., & Larson, B. (1989). Aging: The lived experience. *International Journal of Aging and Human Development, 29*, 67–82.
Kohli, M., & Dittmann-Kohli, F. (1996). *Zweiter Zwischenbericht zum Projekt Deutscher Alters-Survey* [Second in-between report of the Germany Aging Survey]. Berlin, Germany: Freie Universität.
Lerner, R. M., & Busch-Rossnagel, N. A. (Eds.). (1981). *Individuals as producers of their own development: A life-span perspective.* New York: Academic Press.
Markides, K. S., & Boldt, J. S. (1983). Change in subjective age among the elderly: A longitudinal analysis. *The Gerontologist, 23*, 422–427.
Markus, H. R., & Herzog, A. R. (1992). The role of the self-concept in aging. In K. W. Schaie & M. P. Lawton (Eds.), *Annual review of gerontology and geriatrics: Vol. 11* (pp. 110–143). New York: Springer.
Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*, 954–969.
Montepare, J. M., & Lachman, M. E. (1989). "You're only as old as you feel": Self-perceptions of age, fears of aging, and life satisfaction from adolescence to old age. *Psychology and Aging, 4*, 73–78.
Motel, A. (1998). Einkommen und Vermögen [Income and property]. In M. Kohli & H. Künemund (Eds.), *Die zweite Lebenshälfte—Gesellschaftliche Lage und Partizipation. Ergebnisse des Deutschen Alters-Survey, Band I* [The second half of life—Societal positions and participation. Results of the German Aging Study, Band I] (pp. 37–100). Berlin, Germany: Freie Universität.
Neikrug, S. M. (1998). The value of gerontological knowledge for elders: A study of the relationship between knowledge on aging and worry about the future. *Educational Gerontology, 24*, 287–296.
Neugarten, B. L. (1968). The awareness of middle age. In B.L. Neugarten (Ed.), *Middle age and aging: A reader in social psychology* (pp. 93–98). Chicago: University of Chicago Press.
Neugarten, B. L. (1969). Continuities and discontinuities of psychological issues into adult life. *Human Development, 12*, 121–130.
Neugarten, B. L. (1979). Time, age, and the life cycle. *American Journal of Psychiatry, 136*, 887–894.
Pavot, W., & Diener, E. (1993). Review of the Satisfaction With Life Scale. *Psychological Assessment, 5*, 164–172.
Peters, G. R. (1971). Self-conceptions of the aged, age identification and aging. *The Gerontologist, 2*, 69–73.
Ruth, J. A., & 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.
Ryff, C. D. (1991). Possible selves in adulthood and old age: A tale of shifting horizons. *Psychology and Aging, 6*, 206–295.
Snyder, C. R., Harris, C., Anderson, J. H., Holleran, S. A., Irving, L. M., Sigmon, S. T., Yoshinobu, L., Gibb, J., Langelle, C., & Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology, 60*, 570–585.
Steverink, N., Lindenberg, S., & Ormel, J. (1998). Towards understanding successful ageing: Patterned change in resources and goals. *Ageing and Society, 18*, 441–467.
Thompson, P. (1992). "I don't feel old": Subjective ageing and the search for meaning in later life. *Ageing and Society, 12*, 23–47.
Ward, R. A. (1977). The impact of subjective age and stigma on older persons. *Journal of Gerontology, 32*, 227–232.
Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.

Received September 9, 1999
Accepted July 31, 2000
Decision Editor: Toni C. Antonucci, PhD