

**Desired Lifetime and End-of-Life Desires Across  
Adulthood from 20 to 90:  
A Dual-Source Information Model**

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### Abstract

How long do people want to live, and how does scientific research on aging affect such desires? A dual-source information model proposes that aging expectations and desires are informed differently by two sources: personal experiences on the one hand, and scientific and societal influences on the other. Two studies with independent German national samples explored desires regarding length of life and end of life desires among adults between the ages of 20 and 90. Our findings are: (1) desired lifetime is consistent at around 85 years with few age differences, (2) experimental induction of good or bad news from research on aging has little effect in Study 1, (3) interest in science has moderating effects on desired lifetime in Study 2, (4) high prevalence of a strong desire to control the “when and how” of one's death, while only 11 percent completed a living will. Findings are consistent with the dual-source information model.

How do scientific and medical advances in the understanding of human aging contribute to people's hopes and desires regarding the length of their lives and the conditions of death and dying? Scholarly work in gerontology and the medical sciences has reported major improvements in conditions of human aging (Baltes & Mayer, 1999), an extended life expectancy (Robine, Crimmins, Horiuchi, & Zeng, 2007), increased "healthy active lifetime" (WHO, 2006), and much physical, cognitive, and neurological plasticity in old age (Baltes, Reuter-Lorenz & Rösler, 2006; Ball et al., 2002). However, it is not yet well understood how such advances contribute to personal wishes and expectations regarding the length of life. For example, while most people are well aware that the chances of living a long life have greatly improved, it is not yet clear—at least not based on sound empirical data—whether the facts on aging strengthen people's desire to live that long. Indeed, it does not go without saying that people want to live as long as scientific and medical progress makes possible, especially since the dysfunctional state of many oldest-old people is widely known and may have adverse motivational consequences.

The aim here is to lay the groundwork for studying the determinants of lifetime and end-of-life desires, and the prevalence of such desires. Given the relatively limited amount of past research in this area, we concede that a sound theoretical foundation for the sources of people's expectations about aging is lacking. To begin building such a foundation, we propose a dual-source information model of the nature of human aging.

The model contends that personal expectations are based on two major sources of information. The first, an experiential source, pertains to personal experiences with aging, such as an individual's evaluation of his or her current health. The second, a scientific-societal source, comes from scientific findings as reported in the mass media, and as communicated by education, and professional organizations dealing with aging issues. The influence of these scientific-societal sources on an individual depends on advances in the aging sciences, but also on the individual's access to knowledge, for example, the extent to which individuals have educational goals in life or interest in science.

As a first test of this model, we used relatively global indicators of aging expectations, such as desired lifetime and a sense of control over one's own death. The main objective here was to enrich our current knowledge about the individual-science-society interface by collecting information on three psychological facets of age-related expectations: (1) what are people's individual lifetime preferences and how do they relate to experiential or scientific sources of aging-related information, (2) to what extent do people want to control the process of death and dying, (3) how do effects of personal experiences on people's desires regarding

length of life depend on scientific knowledge? We explored these facets in two ways. In Study 1, prior to a telephone interview, participants were randomly exposed to three types of information about recent research findings on aging: good, bad or no (control) scientific news. Study 2 aimed at partly replicating and extending the findings from the first study using a face-to-face interview method.

*Desired longevity differs from expected longevity.*

Expectations on aging are typically investigated relying on estimations of perceived probabilities of reaching a certain age or on estimates of remaining years of life. For example, Mirowsky and Ross (2000) observed in a national U.S. sample that respondents, on average, estimated that they would live to the age of 81. Moreover, participants reported a longer life expectancy, the healthier they were, the more support they had, and the better their socioeconomic situation was. In recent years, aging researchers have begun to more systematically emphasize the critical role of subjective lifetime expectancy (Smith, Taylor, & Sloan, 2001, Ziegelmann, Lippke & Schwarzer, 2006), as well as expectations about remaining future lifetime (Fung & Carstensen, 2006; Lang, 2000). However, high estimates of personal life expectancy may not necessarily imply the actual desire to live that long. The paucity of empirical work on individual desires regarding longevity and the end of life is particularly puzzling considering that disciplines such as psychology, gerontology and economics often build on motivational concepts related to death anxiety (Tomer, 2000), denial of death (Slemrod, 2003), subjective survival probability (Hurd & McGarry, 2002), mortality risk perception (Gan, Gong, Hurd, & McFadden, 2004), mortality salience (Cicirelli, 2006), and subjective proximity to death (Lang, 2000). However, such concepts reflect expectancies rather than values or preferences. Few studies in the aging literature explicitly address individuals' longevity desires. Cicirelli (2006) found that older adults, on average, wanted to live longer than they actually expected to live. This discrepancy increased with age. It is not clear, however, to what extent age-related differences in longevity desires are rooted in differences in personal experiences or by science-based sources of information on aging.

*Scientific-societal information on human aging.*

In general, two contradictory predictions can be made in relation to the desire for greater longevity and higher levels of vitality. On the one hand, in recent history, society has witnessed increasing vitality and activity in old age, which can be expected to generate

positive expectations about longevity and the quality of life in old age. However, much of the good news from recent aging research relates to the “young-old” or “third age” (Baltes & Smith, 2003; Laslett, 1991). This phase of life shows significant positive changes in life quality and in physical as well as mental fitness since the beginning of the 20<sup>th</sup> century.

On the other hand, aging is not always a positive experience. Recent findings about the calamities encountered in the “fourth age” (Baltes & Smith, 2003) suggest drastic losses of cognitive and mental fitness. People’s understanding of the last phase of life is likely to entail an awareness of such findings. Here the high prevalence of dementia, physical frailty, and multi-morbidity may possibly outweigh people’s positive expectations about long life and very old age. In fact, there is much evidence suggesting that aging also implies sources of dissatisfaction, which are often based on personal experiences and decreased vitality (Baltes & Mayer, 1999). Such findings may reflect a sense of hesitation to welcome demographers’ findings of increasing longevity in modern times as a “gift” of longer life.

*The related topic of death and dying.*

Attitudes toward one’s own death and dying have been explored in relation to concepts such as death anxiety or mortality salience (Tomer, 2000). For example, having better socioeconomic resources is related to a stronger will to maintain control over the circumstances of one’s own death (Cicirelli, 1997). Ditto, Druley, Smucker, Moore and Danks (1996) explored preferences of living over dying with hypothetical scenarios of health impairments: young and old adults rated whether they would prefer to either live or die if confronted with several health impairments (e.g., coma, confinement to bed). Response patterns were nearly identical across age. Young and old adults expressed strong preferences for not wanting to live in situations of severe mental or physical incapacitation. Another critical issue is how scientific advances in the medical sciences may trigger concerns about continuation of medical treatment when one is unable to give informed consent. An indication of the personal desire to control the conditions of one’s death and dying may thus be expressed in a living will containing instructions to relatives and doctors regarding medical treatment in case of incapability to decide.

In the present study, we explored effects of experiential sources and scientific-societal sources of aging-related information on desired longevity (“what age would you like to reach?”), desire to control when and how to die, and on depositing a living will. We expect a greater susceptibility of lifetime desires to personal-experiential sources of aging information, and a relative robustness against the science-based sources of information. Thus, we conceive

of desired longevity as a dependent variable rather than as a predictor of adaptation processes across adulthood in contrast to other research.

In Study 1, we randomly divided participants into three groups before the interview: the first group received good news on aging, the second group bad news on aging, and the third, neutral (control) group received no information. We also added measures dealing with several facets of experiential (e.g., preference of high life quality or high longevity) and science-based (scientific interest) sources of information on human aging. While Study 1 was based on a telephone interview, Study 2 aimed at partly replicating and extending the findings in a face-to-face computer-assisted interview (CAPI) situation.

### Method

Analyses are based on two national probability samples of a telephone interview (Study 1), and of a face-to-face interview (Study 2). A professional high-quality fieldwork organization (Infratest Social Research, Munich) conducted the data collection in September 2005 (Study 1), and in Spring 2006 (Study 2). Study 2 was embedded in a large pre-test for the German Socio Economic Panel Study (SOEP; Wagner et al. 1993).

#### Study 1

*Participants.* The 1200 respondents, who agreed to take part in the computer-assisted telephone interview (CATI), represent 45.6% of all contacted and eligible persons (N = 2632). In Germany, more than 97% of households have a telephone. The sample represents the heterogeneity of the German population aged 20 to 80 years with a telephone in the household with respect to central demographic variables (see Table 1). However, middle-aged respondents were overrepresented, and respondents with low levels of education were underrepresented. Due to missing values, we included only 1125 cases in the analysis.

*Measures and Procedure.* We randomly assigned participants to the three conditions prior to the interview: (1) The “good news” condition informed participants that “recent research reports good news on aging with respect to physical, mental and psychological fitness in old age.” (2) In the “bad news” condition participants were informed that “recent research reports rather sad news about the physical, mental, and psychological fitness of very old people aged 90 to 100 years.” (3) In the control condition, no news was presented.

*Desired Lifetime Duration.* Participants responded to the question “What age would you like to reach?” (see Footnote 1). All given answers were accepted and sorted online into a 14-point scale with one “below 60 years”, two “60 to 64 years”, and so on up to 14 “120 years

or older”. Responses were transformed based on mid-category centers of each age bracket (“1” = 60 years, “2” = 62 years, “3” = 67 years ... “14” = 120 years). In addition, participants rated whether social policy and research efforts should aim at increasing the quality of life, increasing longevity or both. *Preference for life quality enhancement over longevity* was used as a dichotomous variable (Yes = 1, No = 0).

*Desire to Control Death and Dying.* Participants indicated on a seven-point scale (One “absolutely don’t agree” to seven “fully agree”) their agreement with the statement: “I want to determine on my own, when and how to die” (M = 5.7, SD = 2.0).

*Subjective Health.* Participants responded to three items assessing their physical and mental health on a seven-point rating scale (e.g., “How healthy do you feel, physically and mentally?”). Alpha of the three items was .67. Higher values indicate better health

Indicators of socioeconomic resources and personality were included as covariates, that is, education (years of schooling to completion of highest educational degree), size of household, income (average weighted household income), plus two ultra-short personality constructs: neuroticism (3 items,  $\alpha = .59$ ), and openness to experience (4 items,  $\alpha = .62$ ). Both personality scales were tested in an earlier study (Lang, 2005) yielding acceptable coefficients of 6-week-retest reliability ( $r > .75$ ) and converging validity with established scales.

*Manipulation check.* As a check of the informational conditions, participants rated the proportion of things improving with age (i.e., “When evaluating aging with 100 points in total, how many points reflect how much is getting better with age, and how many reflect how much is getting worse?”). Responses had to add up to 100 points. On average, participants expected 46% (SD = 19.1) of aging changes pertaining to things getting better. As intended by the experimental conditions, there was a statistically significant effect in the expected direction of the information groups on perceptions of how much is improving with age. Respondents, who were given bad news on aging expected more negative age changes (M = 44.1, SD = 19.9) than those who received good news (M = 47.8, SD = 20.1) or no news (M = 46.2, SD = 17.0;  $F(2;1093) = 3.4, p < .05, \eta^2 = .01$ ). Although the manipulation effect appears small, it is of substance in this telephone study. The effect serves to show that, on the whole, participants were responsive to the statements of positive or negative information on recent scientific advancements.

## Study 2:

*Participants.* A random-route sampling procedure was used to contact participants for the study. Five hundred respondents aged 20 to 92 years (representing 48.1% of persons

contacted) completed the computer assisted personal interview. (12 respondents were older than 80 years, which was the maximum age in Study 1). Of these, 376 respondents gave a numerical answer to what age they would like to reach. As shown in Table 1, sex, age and education were similarly distributed in this sample and in the German population.

*Desired Lifetime Duration.* A preliminary statement was added to the item from Study 1: “When thinking about your total lifetime, what age would you like to reach?” (Footnote 1) Respondents produced a number in years. All given answers of respondents were accepted, and recoded as in study 1. Moreover, one new response format (“I don’t care”) was added: 101 participants opted for this response (24.2%).

Two additional items dealt with expectations and the determination of desired longevity: (a) Subjective Probability of Desired Lifetime (“How likely is it that you will live that long (to the age you want to reach)?”) was rated on an 11-point scale ranging from zero “absolutely unlikely” to ten “very likely”. (b) Determination of Desired Lifetime Duration (“How desirable would it be for you to reach the age (you want to) if you were confronted with a health problem resulting in frailty or the need for health care?”) was rated with a four-point scale ranging from one “not at all desirable” to four “very desirable”. (c) Preparation of a Living Will: Participants stated whether they had signed a legal document giving instructions for medical treatment in a case of incapacity to decide (“Have you prepared a personal living will providing instructions for medical treatment in case of severe injury or disease?” Yes=1, No=0).

Finally, participants rated one item assessing their *interest in science and technology* (“How interested are you in issues related to science and technology?”). Participants rated the item on a five-point scale (ranging from 1 “not at all interested” to 5 “very strongly interested”).

*Subjective health* was assessed with a single item five-point scale (“How would you rate your current health?”). Covariates were education (years), income, occupational status (occupied=1, not occupied=0), marital status, household size, living with children in the same household, and—as in study 1—neuroticism ( $\alpha = .53$ ) and openness to experience ( $\alpha = .76$ ).

*Missing cases treatment (both studies).* In Study 1 with respect to the focal criterion variable of desired lifetime, a total of 6.3% (N = 75) participants did not respond. A missing value analysis revealed that missing cases are nonrandom and non-ignorable (Little’s MCAR test; Chi Square = 70.0, df = 29,  $p < .001$ ). Separate variance t tests and logistic regression showed that non-responders as compared to responders were older ( $t = 3.8$ , df = 81.7,  $p < .01$ , OR = 1.03,  $p < .01$ ) and more likely to be unemployed ( $t = -2.1$ , df = 80.1,  $p < .05$ ; odds ratio

= 2.27,  $p < .01$ ). While findings remain unchanged when including missing-imputed values based on the Expectation Maximization (EM) method, we decided to report analyses in the following after dropping these 75 cases for reasons of space. Estimates of age and occupation on desired lifetime may nevertheless be biased due to nonrandom sample selectivity.

In Study 2, there were 23 missing cases (4.6% for the question of *desired lifetime duration*, in addition to the 101 responses of “I don’t care”). This means that there were 376 cases with valid numerical answers to this question. Participants, who gave the “I don’t care” response, did not differ significantly from other participants with respect to central variables such as age, gender, education, income, death of a parent, or subjective health. In order to test whether the missing responses had an effect on the observed pattern of associations, all variables used in the subsequent analyses were entered in a MVA: a non-significant Little’s MCAR test ( $\text{Chi}^2 = 82.2$ ,  $df = 71$ ,  $p = .17$ ;  $N = 500$ ). This means, that excluding the non-responding participants from the analyses does not significantly alter the observed associations among variables.

*Weighting.* Data from both studies were not weighted to correct for sample bias. One reason is that the focus of the present research is on relationships within individual response patterns rather than on the estimation of a population distribution.

## Results

The data analysis proceeded in two steps. In Study 1, the effects of the informational conditions and personal sources of aging experience on desired lifetime duration and control over death and dying were analyzed. In Study 2, desired lifetime duration was analyzed in relation to variables that indicated trust and interest in societal institutions, in addition to personal sources of aging experience.

### *Expectations about Longevity and End-of-Life*

Table 1 displays means for the desired lifetime duration across the three information groups (“good news”, “bad news”, no information on aging) in Study 1 together with results for Study 2. To our surprise, in Study 1 there were no considerable main effects of the pre-assessment informational groups. Moreover, desired lifetime duration did not differ significantly between the two study samples ( $t = 1.94$ ,  $df = 1499$ , n.s., Cohen’s  $d = .12$ ). This is an important check of robustness because the two studies relied on two different interview methods (telephone and face-to-face).

The findings of Study 1 were especially surprising to us. In general, giving different information on the positive or negative direction of recent scientific findings on aging did not alter preferences for desired lifetime. There were only a few significant differences in the correlation pattern between the three information groups: when hearing bad news about aging, a stronger preference for enhancement of life quality over longevity is associated with a greater desire for control of death ( $r = .17, p < .001$ ). Such associations were not observed in the other groups. In sum, the results point mainly to the generality and modesty of expectations about desired length of life and end-of-life issues.

Consistently across both studies, the response patterns on desired lifetime were weakly associated with chronological age (Study 1:  $r = .07, p < .05, N = 1125$ ; Study 2:  $r = .17, p < .01, N = 376$ ; after excluding adults  $>80$  yrs:  $r = .13, p < .01, N = 364$ ). Figure 1(a) shows the percentage distribution of responses across the four age groups in Study 1. As can be seen in Figure 1(a), the distribution of responses was fairly similar across age groups. Older adults ( $>65$  years), on average, expressed a modest desire to live longer than young and middle-aged adults. Figure 1(b) shows the distribution of desired lifetime in the face-to-face-interview Study 2, which serves to replicate the findings from the telephone interview study. Only the few participants who were older than 80 years ( $N = 12, M = 84.8$  yrs,  $SD = 3.8$ ) deviated from the pattern for obvious reasons, with an average desired lifetime of 93.3 years ( $SD = 5.8$ ).

#### *Desired Lifetime Duration and Desire to Control Death and Dying (End-of-Life)*

Table 2 displays the unstandardized coefficients of the regression of desired lifetime for Studies 1 and 2. All variables were entered as one block in the regression. As shown in the table, in Studies 1 and 2, older and subjectively healthy adults showed a greater preference for greater longevity. However, hearing good or bad news on aging made no difference for the desired lifetime in Study 1. Respondents in Study 1 who expressed a preference for quality of life over length of life reported longevity desires that were three to four years shorter. In Study 1, but not in Study 2, men wanted to live longer than women. In Study 2, greater life satisfaction was associated with the desire for greater longevity. The linear association of desired lifetime duration and its subjective probability indicates that the longer respondents wanted to live the lower their expectations of actually reaching the desired age ( $r = -.38, p < .01, N = 376$ ). Observed effects persisted when including the covariates (shown in Table 2).

With just one notable exception in Study 2, there were no significant interaction effects of any two predictors above and beyond effects of all other predictors and covariates. Scientific interest moderates the association of desired lifetime duration with perceptions of its subjective probability ( $R^2$ -change = 0.02,  $F$ -change (1; 365) = 11.0,  $p < .01$ ). Figure 2

illustrates this effect. Respondents with strong scientific interest were more likely to desire a length of life that they considered not realistic (thus expressing both a strong optimism and realism). People with weak scientific interest had more modest longevity desires, irrespective of their expectations of living that long.

*Desire to control one's death and dying and completion of a living will.*

Participants expressed a strong and age-robust desire for self-determination regarding the end of their lives. More than 75% of all respondents (i.e., 75.3% of men and 80.3% of women) expressed agreement with the statement that they would like to decide when and how to die (i.e., they checked one of three top ratings on the seven-point scale). For this reason, we dichotomized the variable and conducted a logistic regression analysis predicting the desire to control the end of one's life. In Study 2, we did not assess the item describing the respondent's desire to control death and dying, but were interested instead in the behavioral expression thereof, that is, in whether the respondent had completed a living will. Here, 10.9 percent of respondents had done so.

We expected that older age groups—due to their greater temporal proximity to death—would be more likely to want to control the circumstances surrounding death. This assumption was not borne out. As Table 3 shows, the desire to control one's end-of-life and the completion of a living will was not related to chronological age. In Study 1, a preference for life quality over longevity and gender were predictive of a desire to control death and dying. Men were less likely to want to control death and dying than women (OR = 0.73, SE = .14,  $p < .05$ ). Preference of quality of life over quantity was associated with a greater likelihood to desire control over death and dying (odds ratio = 1.50, SE = .20,  $p < .05$ ). In Study 2, only one experiential predictor and none of the science-society predictors predicted the completion of a living will: when respondents had experienced the death of a parent, they were more likely to have a living will. There was no difference between men and women.

In both studies, the observed effects remained unchanged when including the covariates. We also tested whether any of the science-society predictors had moderating effects. There were no interaction effects with two notable exceptions: one in Study 1 and one in Study 2. In Study 1, there was a significant but small interaction effect of the information group with household income ( $R^2$ -change = 0.02,  $F$ -change (1;365) = 11.0,  $p < .01$ ): when the economic situation was above average, hearing bad news about aging was associated with an increased desire to control the circumstances of death and dying. In Study 2, a two-way interaction effect of subjective probability of desired lifetime and education proved significant

( $B = -0.08$ ,  $SE = .04$ ,  $p < .05$ ,  $R^2$  Change = .02). Figure 3 illustrates the interaction effect. Among respondents with less than nine years of education, those who had realistic longevity desires were more likely to have completed a living will than those who had unrealistic longevity desires (odds ratio in low education group = 2.1,  $N = 142$ ,  $p < .01$ ).

### Discussion

Research in the field of gerontology generally proceeds on the tacit assumption that most people want to live a long life. However, the question remains open precisely how long people want to live. In two independent heterogeneous samples of the German population, the majority of respondents expressed a desire to live into their mid-eighties with only about 15 to 17 percent wanting to live longer than 90 years. Moreover, lifetime and end-of-life desires did not differ much between young, middle-aged, and old adults.

There is very little comparable data from other historical epochs or cultural contexts that would shed further light on the central question of what kinds of secular shifts are occurring in late life and longevity expectations in modern societies. In a sense, then, the present study can be seen as providing an impetus for further historical and culturally comparative research. In laying the groundwork for a dual-source information model of human aging, we find that the desire for high longevity depends to some extent on experiential sources of aging information but is relatively robust to scientific-societal information sources. Consistent with the work of Cicirelli (2006), we find that desired longevity exceeds the subjective life expectancy reported in other studies (Mirowsky & Ross, 2000), and that desired lifetime duration depends heavily on current health ratings and other experiential factors. In general, we were surprised by three findings: first, the relative modesty of individual longevity desires; second the relatively strong preference for active control over one's own death and dying; and third, the relatively low impact of scientific sources of information on aging. Apparently, most Germans in this heterogeneous population sample were more alike than different with respect to lifetime expectations and end-of-life desires. However, the differences observed are of theoretical and practical relevance.

Our findings are consistent with the dual-source model of processing information about aging expectations. The information content provided by the two sources—scientific-societal expectations and personal experiences—often converge in a positive view of aging for the young-old in the third age of life. However, the situation is different for the oldest-old in the fourth age. In this respect, the two sources of information about the nature of aging produce dissonance, in which personal experience plays the more powerful role. Consistent

with this is the finding that subjective ideal longevity is associated with subjective health, irrespective of current age across a broad and heterogeneous sample of adults from 20 to 80 years. Effects of subjective health exceed the impact of good vs. bad news on aging. This suggests that expectations about aging reflect idiosyncratic perceptions of one's present health conditions rather than general insights from the science of aging. Individual preferences to live a modest number of years reflect individual views about life quality. For instance, individuals who preferred to live a good rather than a long life preferred a shorter lifetime.

About two thirds of respondents expressed the desire to decide when and how to die. Women expressed a stronger desire to control death and dying than men. One explanation may be that women are more often in the role of family caregiver, and are more likely to be confronted with issues related to dying. Such experiences may enhance the desire to exercise control over death. We did not systematically ask for personal experiences related to the death of relatives. However, in Study 2 death of a parent proved to be the best predictor for preparing a living will.

Findings point to a limited relevance of knowledge-related goals in determining one's desired lifetime. Strong interest in science appears to enhance individual desires to live longer, while at the same time improving the sense that such hopes are still unrealistic at this time. Having strong interests in science may cause more sophisticated expectations about what is possible and what is desirable in science. However, in Study 1, the informational conditions of good versus bad news on aging had no effect. Processing news from aging research may depend on the willingness to process such information. Clearly, our single-item measure may not have captured all relevant aspects in this respect. More research is warranted addressing the historical, contextual and idiosyncratic conditions of desired lifetime and end-of-life desires more explicitly, and including a more in-depth assessment of scientific sources of information about aging.

One caveat needs to be added when interpreting the findings. Our interview methods rely on self-reporting and may thus be positively or negatively biased. This is, however, a general problem in survey research. Furthermore, other (e.g. visual) sources of sensory input in Study 1 may have been more effective. Generally, the amount of variance accounted for in Study 1 was lower than in Study 2. This may be due to the different sample sizes but also to the telephone interview method, which may lead to greater noise in the data. Visual sources of information on good or bad news about aging might have been processed more efficiently. Our method of presenting good or bad news may not have been the strongest test for a scientific impact of aging expectations, but our manipulation check produced findings

showing that the information was cognitively processed and did yield different expectations about aging changes. The information manipulation thus appears to have worked to some degree. Specifically, respondents who received good news on aging expected a greater percentage of positive aging changes than respondents, who received bad news.

Expectations about longevity and the end of life are known to influence motivational processes throughout adulthood (Fung & Carstensen, 2006; Lang, 2000). The current research suggests that personal perspectives on longevity are fairly robust against scientific sources of information, while being tied strongly to personal life experiences. Scientific news is thus only part of the story. Future research will have to take into consideration how people's ideals and desires for aging are associated with other everyday representations of aging as well.

In conclusion, the present study is but a first step in a new path of inquiry. To understand the role of old age in a changing society, we need to better understand not only the positive changes in longevity resulting from medical advances, but also the potentially negative implications resulting from the vulnerabilities of the fourth age—for instance, with increasing risks of dementia—that contrast the positive perspective of a “happy gerontology” (Bobbio, 2001). It seems particularly important to begin monitoring and analyzing the impact of such changes in expectations about aging more systematically. It is likely that future comparative analyses will produce a more complex picture that reflects the varying and differential conditions of aging. For the present, the increased longevity so celebrated by demographers seems to not be seen just as a blessing by most people.

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## Footnote

1 The precise wording of the German item of desired lifetime duration is “(Wenn Sie einmal ueber die Laenge ihres Lebens nachdenken) Wie alt wuerden Sie gerne werden?”. The wording of the German item on subjective probability is: “Für wie wahrscheinlich halten Sie es, dass Sie tatsaechlich so alt werden?”.

Table 1

## Sample characteristics and population parameters

Variable	Popu- lation <sup>a</sup>	Study 1: Pre-assessment experimental condition <sup>a</sup>			Study 1 (N=1125)	Study 2 (N=376)
		Good news (N=371)	Bad news (N=373)	Neutral (N=381)		
		Gender (%):				
Women	51.7	51.2	56.0	51.2	52.6	54.3
Men	48.3	48.8	44.6	48.8	47.4	45.7
Age Cohort (%):						
20-34 yrs	22.7	32.2	31.2	31.3	31.6	18.9
35-49 yrs	30.7	34.0	33.1	39.1	35.4	28.2
50-64 yrs	23.2	22.0	21.8	20.8	21.5	26.3
65-79 yrs	18.0	11.8	13.9	8.9	11.6	23.4
>80 yrs	5.4	–	–	–	–	3.2
Age Cohort (years; SD)		43.4 (14.6)	44.3 (15.4)	42.7 (14.0)	43.9 (14.9)	51.6 (17.7)
Educational level (%)						
9 years or less	47.7	21.2	18.4	20.2	19.9	37.8
10-12 years	28.2	34.9	37.0	33.2	35.0	39.1
13 years or more	24.1	44.0	44.6	46.6	45.1	23.1
Education (years, SD)		12.2 (3.4)	12.4 (3.5)	12.3 (3.3)	12.3 (3.4)	10.3 (1.7)
Desired lifetime (DLT)		86.3 (10.9)	86.0 (10.1)	85.8 (10.4)	86.0 (10.5)	84.8 (10.3)
Subj. Probability of DLT <sup>b</sup>		n.a.	n.a.	n.a.	n.a.	6.2 ( 2.8)
Points Better with Age		47.8 (20.1)	44.1 (19.9)	46.2 (17.0)	46.0 (19.1)	n.a

Note: <sup>a</sup> Source: German Federal Office of Statistics, Statistical Yearbook 2006. <sup>b</sup> Range of subjective probability of desired lifetime duration is from 0 (absolutely unlikely) to 10 (very likely)

Table 2

Multiple Regression (OLS) of Desired Lifetime Duration (in Years) on Experiential and Science-Based Sources of Aging Knowledge in Studies 1 and 2.

Predictor	Study 1 ( <i>N</i> = 1125) Regression Model (unstand. coefficients)				Study 2 ( <i>N</i> = 376) Regression Model (unstand. coefficients)			
	1		2		1		2	
	B	SE	B	SE	B	SE	B	SE
Intercept (Origin)	70.0	2.6	66.3	2.9	71.2	4.2	70.1	4.2
Age Cohort	0.09*	.02	0.08*	.02	0.18*	.04	0.18*	.04
Gender (1=men, 0=women)	1.82†	.66	-1.78*	.61	0.73	.94	-0.14	1.03
<i>Experiential Sources:</i>								
Subjective Health	2.44*	.40	2.33*	.36	2.56*	.60	2.57*	.61
S1: Prefer Life Quality <sup>a</sup> (yes=1)	-3.18*	.92	-3.24*	.93	n.a.	n.a.	n.a.	n.a.
S2: Life Satisfaction	n.a.	n.a.	n.a.	n.a.	0.81*	.27	0.67*	.27
S2: Subj. Probability of DLT	n.a.	n.a.	n.a.	n.a.	-1.68*	.19	-1.67*	.19
S2: Parent(s) Died (=1, No=0)	n.a.	n.a.	n.a.	n.a.	-0.97	1.36	-0.92	1.37
<i>Scientific-Societal Sources</i>								
S1: Good News (=1, other=0)			0.42	.73			n.a.	n.a.
S1: Bad News (=1, other=0)			0.43	.73			n.a.	n.a.
S1: Need More Aging Science			0.50†	.20			n.a.	n.a.
S2: Scientific Interest			n.a.	n.a.			0.95†	.48
Education (in years)			0.08	.09			-0.19	.30
Equival. Household Income			0.28	.20			0.46	.40
<i>Covariates Not Entered<sup>c</sup>:</i>								
S1+2: Size of household <sup>d</sup>			-0.14	.27			-0.07	.57
S1+2: Neuroticism			-0.43	.25			0.76	.42
S1+2: Openness to Exp.			0.45	.25			0.22	.44
S1+2: Occupied (=1, No=0)			0.54	.81			-0.36	1.08
S2: Married (Yes=1, No=0)			n.a.	n.a.			-0.87	1.13
S2: With child (=1, No=0)			n.a.	n.a.			1.03	1.51
R (R incl. cov.)	.249		.268 (.279)		.509		.519 (.527)	
R <sup>2</sup> (R <sup>2</sup> incl. cov.)	.062		.072 (.078)		.259		.270 (.278)	

Notes: n.a. = Variable not available in the study. S1 = Study 1 variable; S2 = Study 2 variable. \*  $p < .01$ , †  $p < .05$ ; <sup>a</sup> Dummy (1 = yes, 0 = no). <sup>b</sup> Dummy coding of three informational conditions: Reference category is “no information”, <sup>c</sup> Coefficients are reported before entering covariates into the equation. Covariates do not lead to significant change of R<sup>2</sup> in Model 3 (not shown). <sup>d</sup> Number of persons living in same household.

Table 3

Two Logistic Regressions of Desire to Control Dying (Study 1) and of Living Will (Study 2)

Predictor	Study 1 (N = 1125): <i>Desire to Control Dying (1/0)</i> Logistic Regression Model				Study 2 (N = 376): <i>Completion of Living Will (1/0)</i> Logistic Regression Model			
	1		2		1		2	
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE
Constant	2.08	0.58	1.68	0.67	0.00	1.35	0.00	1.701
Age Cohort	1.00	0.01	0.99	0.01	1.45	0.34	1.58	0.35
Gender (1=men, 0=women)	0.73†	0.14	0.77†	0.15	1.15	0.35	0.84	0.38
<i>Experiential Sources:</i>								
Subjective Health	1.06	0.08	1.06	0.08	0.95	0.22	1.11	0.22
S1: Prefer Life Quality (yes=1)	1.49†	0.20	1.55†	0.20	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>
S2: Life Satisfaction	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	1.17	0.10	1.11	0.10
S2: Subj. Probability of DLT	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	1.14	0.07	1.14	0.07
S2: Parent(s) Died (=1, No=0)	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	3.38†	0.58	3.34†	0.58
<i>Scientific-Societal Sources</i>								
S1: Good News <sup>a</sup> (=1, other=0)			0.97	0.17			<i>n.a.</i>	<i>n.a.</i>
S1: Bad News <sup>a</sup> (=1, other=0)			1.00	0.18			<i>n.a.</i>	<i>n.a.</i>
S1: Need More Aging Science			1.12†	0.05			<i>n.a.</i>	<i>n.a.</i>
S2: Scientific Interest			<i>n.a.</i>	<i>n.a.</i>			1.32	0.19
Education (in years)			0.98	0.02			1.03	0.11
Equival. Household Income			1.68	0.05			1.18	0.16
<i>Covariates Not Entered<sup>b</sup>:</i>								
S1+2: Size of household <sup>c</sup>			0.95	0.06			1.29	0.28
S1+2: Neuroticism			0.98	0.06			1.25	0.16
S1+2: Openness to Exp.			1.17†	0.08			1.22	0.18
S1+2: Occupied (=1, No=0)			1.24	0.19			0.51	0.46
S2: Married (Yes=1, No=0)			<i>n.a.</i>	<i>n.a.</i>			1.23	0.46
S2: With child (=1, No=0)			<i>n.a.</i>	<i>n.a.</i>			1.95	0.66
-2 Log likelihood	1233.4		1225.5 (1218.3)		236,1		230.8 (224.0)	
Nagelkerke R <sup>2</sup> (R <sup>2</sup> incl. cov.)	.012		.022 (.032)		.112		.138 (.172)	

Notes: \*  $p < .01$ , †  $p < .05$ , *n.a.* = not available. S1 = Study 1 variable; S2 = Study 2 variable. <sup>a</sup> Dummy coding: Reference is “no information”, <sup>b</sup> Covariates are entered blockwise. <sup>c</sup> No. persons living in household. 95% CI (upper/lower):  $\text{Exp}(\ln(\text{odds ratio}) \pm \text{SE} \times 1.96)$

## Figure Captions

### *Figure 1*

Desired lifetime (in years) across age groups (a) for Study 1 (N = 1175, 20-80 years) and (b) for Study 2 (N = 364; 20-80 years, after exclusion of 12 respondents older than 80 years): In older age groups adults express a greater preference to live longer.

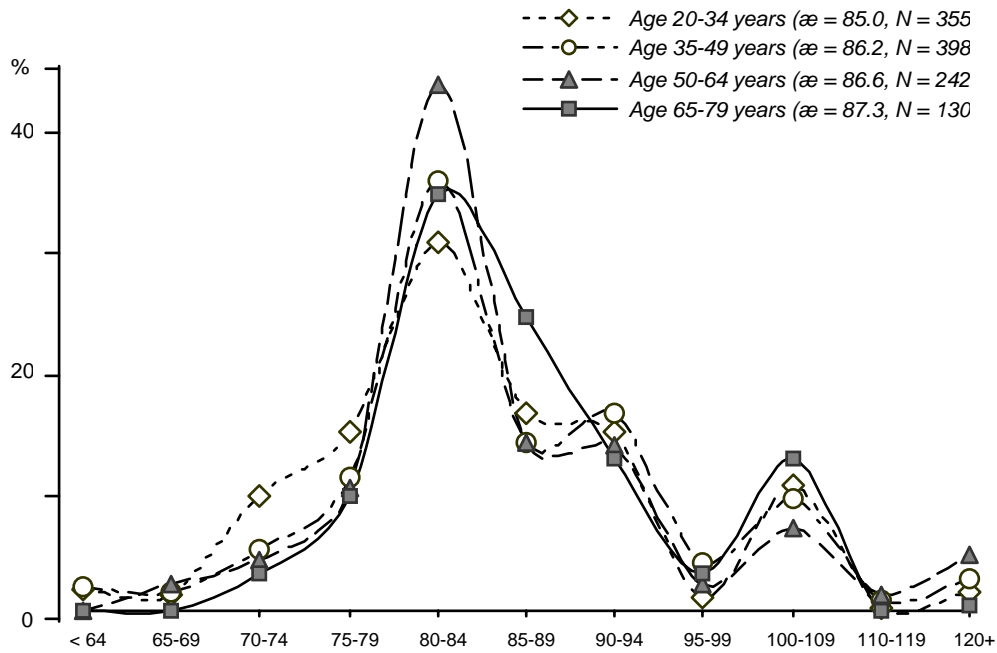
### *Figure 2*

Study 2: Scientific Interest moderates the association of desired lifetime duration and its subjective probability: When scientific interest is strong, unrealistic wishes of longevity prevail ( $R^2 = .021$ ,  $T = 3.32$ ,  $p < .01$ ).

### *Figure 3*

Study 2: Living will completion is depending on education and subjective probability of desired lifetime duration: When education is low, more realistic longevity desires make it more likely that respondents have completed a living will form (N = 376).

Study 1 (N = 1125): "I would like to reach the age of  $\hat{E}$  years."



Study 2 (N = 364): "I would like to reach the age of  $\hat{E}$  years".

