



Views on Aging Throughout the Adult Lifespan

Age Grading in Five Dimensions

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Abstract: Views on aging (VoA) have been comprehensively examined in the health context, whereas little is known about how VoA vary between age groups. Two representative surveys (WIdO survey: $N = 3,000$, 18–39 years; German Ageing Survey: $N = 4,349$, 40–85 years) used the same five scales to measure VoA. We found a tipping point between feeling older than one's chronological age and feeling younger at age 24.6. Gain-related perceptions of aging were high in all age groups, and loss-based perceptions increased with advancing age. Only after the age of 77 did participants count themselves in the group of "old people." These findings underscore the importance of conceptualizing VoA as a lifespan construct and extend earlier studies with either younger or older adults.

Keywords: subjective age, age threshold, self-perceptions of aging, large-scale survey, Germany

Views on aging (VoA) – that is, how individuals think about their own aging, about being old, or about older people as a group – are important for manifold facets of health, well-being, and functioning in later life (Debreczeni & Bailey, 2021; Kornadt et al., 2020; Tully-Wilson et al., 2021; Westerhof et al., 2023; Wurm et al., 2017). VoA represent an umbrella construct that encompasses self-perceptions of aging (SPA) as well as how old participants feel – known as their subjective age – and age stereotypes and other, more general associations to age and older people (i.e., at what age a person is considered to be old). These VoA develop early in life and show changes but also considerable stability as people move through their lifespan (Kornadt et al., 2020; Wettstein et al., 2023). Given the importance of earlier-held VoA for development throughout life, understanding their characteristics across the lifespan is highly important for examining factors contributing to adaptive aging. However, evidence for age differences in VoA across the lifespan has been limited mostly to specific age groups (i.e., younger or older adults), convenience samples, or VoA constructs (e.g., subjective age). To compare different VoA constructs across adult life, we use two population-based representative surveys from Germany which together cover an age range from 18 to 85 years to examine cross-sectional age trajectories in VoA constructs representing five different dimensions (subjective age, age at which a person is

considered old, SPA related to ongoing development, social loss, and physical loss).

Trajectories of VoA in Earlier and Later Life

Subjective age is probably one of the most researched constructs in VoA with a considerable impact on developmental outcomes in later life (Kotter-Grühn et al., 2016). Usually constructed as the difference score between a person's chronological age and felt age (or as a proportional discrepancy score that additionally divides the difference score by age; Kotter-Grühn et al., 2016), several studies show that this score is usually positive earlier in life, which means that people feel older than they actually are. According to findings from a university sample, this value turns negative at about 25.5 years of age (Galambos et al., 2005) and remains so until the latest life stage (Pinquart & Wahl, 2021). The phenomenon of feeling younger has been labeled *subjective age bias* (Weiss & Weiss, 2019) and may reflect a process of age-group dissociation to cope with ageism (Chasteen & Cary, 2015).

In a classic study, Rubin and Berntsen (2006) found in a representative Danish sample of 1,470 adults between 20 and 97 that the absolute difference between chronological and felt age increased with age, and that the proportional discrepancy score remained stable at feeling

20% younger after 40. Pinquart and Wahl (2021) corroborated this pattern in a meta-analysis of 294 studies with participants aged 8–94 years and even found that it was universal across many different cultures. Given these results, we expect a similar pattern for German adults, that is, an increase in the difference between subjective age and chronological age, with an observed crossover effect most likely to occur when participants are in their mid- to late-20s. The crossover effect refers to the age at which people cease to feel older and begin to feel younger than their chronological age. A recent study of middle-aged and older adults examined the historical change in subjective age and revealed that cohorts born later feel younger by 2% for every decade they were born later (Wettstein et al., 2023). As this cohort change did not vary for different age groups, we expect that the proportional amount of feeling younger will remain stable in the second half of life for our cross-sectional age group comparison.

To date, comparatively little research has investigated the trajectories of SPA, particularly considering the multidimensional nature of SPA. Based on longitudinal data from the German Ageing Survey (DEAS), one study (Diehl et al., 2021) illustrated that individuals in midlife associated aging more strongly with gains such as SPA related to ongoing development than with SPA related to physical or social losses; however, starting at about age 65, participants showed increases in SPA pertaining to physical and social losses, whereas SPA regarding ongoing development considerably decreased from around 55 years of age (Diehl et al. 2021). This attests to the multidimensionality of SPA trajectories. However, to our knowledge, no study has investigated differences in SPA, including both younger and older adults, based on large-scale datasets. Given the previous findings, also for related constructs such as awareness of age-related changes (e.g., Wettstein et al., 2022), we expect to find relatively higher perceptions of age-related losses (physical and social) and fewer perceptions of SPA related to ongoing development for older compared to younger participants.

Regarding the age at which a person is considered to be old, a well-known phenomenon is that people strongly desire to distance themselves from older persons as a group, given that old age is often associated with negative characteristics and developments (Weiss & Kornadt, 2018). For this reason, older adults usually perceive a higher *age threshold* or assign a higher age to being considered old than younger individuals. In a cross-sectional study that investigated domain-specific age thresholds in a German convenience sample aged 30 to 80 (Kornadt & Rothermund, 2011), we found that the age threshold was higher for older than younger participants. However, this trend was somewhat attenuated for the oldest age group, indicating that, for this group, distancing oneself from the group of

“old people” may be less feasible or important. In another large cross-sectional sample of participants aged 10 to 89 (in which older adults were underrepresented), Chopik and colleagues (2018) also found a linear increase in age thresholds for older age groups that slowed down a bit in later life. In comparison, a recent study based on the European Social Survey found a linearly higher age threshold in older age groups, though no slowdown emerged in the later cohort (Jurek, 2022). Most recently, Wettstein and colleagues (2024) used data from DEAS with participants aged 40 and older to comprehensively test cohort and age differences in age thresholds. They found that age thresholds increased with chronological age and with historical time, although this trend for a postponement of old age was attenuated in later-born cohorts. However, this study included no younger participants. Given the previous evidence, we expect a linear increase in age thresholds in the present study, with a potential attenuation of this effect in later life.

Overall, the present research aims to replicate previous studies that investigated age group differences in VoA across life and to extend these studies by comparing five different VoA dimensions using two large, representative samples spanning the entirety of adulthood from 18 to 85. Given the previous elaborations, we hypothesize the following:

Hypothesis 1 (H1): A crossover effect from feeling older to feeling younger than one’s chronological age in the late-20s.

Hypothesis 2 (H2): Stability in the proportional amount of feeling younger in the second half of life (i.e., after age 40).

Hypothesis 3 (H3): Higher perceptions of age-related losses (physical and social) and fewer perceptions of SPA related to ongoing development for older compared to younger participants.

Hypothesis 4 (H4): The age at which someone is considered to be old to increase linearly with participant age, with a possible attenuation for the oldest participants.

Methods

Participants and Procedure

Sample 1 consists of $N = 3,000$ young adults from the WIdO survey, for which Respondi AG (Cologne), a survey institute from an ISO-certified online access panel for market and social research (Mingle Panel), selected a random sample

of participants representative of the German population (quota sample). The WIdO survey examined how younger people aged 18–39 think about old age, aging, and old age in general. In 2019, participants answered an online questionnaire, comprising previously established questions from the German Ageing Survey (DEAS). Blawert et al. (2020) report further sampling details. The sample had a mean age of 29.5 years ($SD = 6.4$; range: 18–39 years), and 49.6% were women.

Sample 2 stems from the German Ageing Survey (DEAS; Klaus et al., 2017), a representative, register-based, large-scale study of community-dwelling adults aged 40 and older in Germany. Since 1996, this survey has set up new representative samples every 6 years (except for 2020 because of the COVID-19 pandemic). The present study thus used data from DEAS-2014, as this sample is closest in time to the assessment of Sample 1. Data were collected using a computer-assisted personal interview and a self-report questionnaire. Since four of the five VoA indicators were assessed within the questionnaire, we based all analyses on this subsample, which consists of $N = 4,349$ participants with a mean age of 62.35 years ($SD = 11.48$; range: 40–85; 50.5% women). Individuals excluded from the present study because they only answered the interview were more often male [$\chi^2(1) = 15.16, p < .001$], less educated [$\chi^2(2) = 45.47, p < .001$] or rated their health status as worse [$t(5,979) = 0.84, d = 0.098, p < .001$], but did not differ in chronological age [$t(5,987) = -0.521, p < .14, d = -0.044$].

Measures

We measured *self-perceptions of aging* using the AgeCog Scales (Steverink et al., 2001; Wurm et al., 2007). We used the subscales AgeCog Ongoing Development, AgeCog Physical Losses, and AgeCog Social Losses, with each comprising 4 items rated on a 4-point Likert scale from 1 = *definitely true* to 4 = *definitely false*. The subscale Ongoing Development refers to the notion that one's aging is associated with personal growth (e.g., "Aging means to me that I continue to make plans"; Cronbach's $\alpha = .78$ in both samples). The subscale Physical Losses refers to the perception that one's aging is associated with physical decline and decreasing vitality (e.g., "Aging means to me that I am less vital and fit"; Cronbach's $\alpha = .85$ in Sample 1 and .76 in Sample 2). The subscale Social Losses measures perceptions of loss of social status and feelings of loneliness (e.g., "Aging means to me that I am less respected"; Cronbach's $\alpha = .78$ in Sample 1 and .71 in Sample 2). Scores were reverse-coded and averaged over the respective items if at least 2 of the 4 items were answered, so that higher scores reflect greater endorsement of the respective subscale. Additionally, the model fits derived from measure-

ment invariance models of SPA across age groups and time indicate that comparisons across age groups and time are valid (Jung et al., 2021; Wurm et al., 2007).

We measured *subjective age* with the 1-item standard question: "How old do you feel?" For analyses, we calculated a difference score indicating how many years a person feels older or younger than their chronological age. In addition, we calculated a proportional score by subtracting the chronological age from the subjective age and dividing it by the chronological age (Kotter-Grühn et al., 2016). Thus, proportional scores indicate the proportion that a person feels younger or older than their chronological age.

We measured *age at which a person is considered old* (age threshold) by asking participants, "At what age would you describe someone as old?" Responses were coded as number of years.

Statistical Analysis

We carried out analyses with R version 4.1.3 (R Development Core Team, 2022). DEAS – 2014 data were weighted (cf. Klaus et al., 2017) to adjust for the disproportional stratification systematically applied in every new wave of the DEAS survey and to have a reasonable number of participants in specific subgroups of the population (e.g., older men in East Germany). Hence, in Sample 2, mean scores (SD) and correlation coefficients (Pearson's ρ) are presented as weighted statistics. Outliers 3 SD above and below the mean were excluded for subjective age and age threshold (Stephan et al., 2021). Thus, we excluded 54 (1.8%) and 35 observations (1.2%) in the respective variables in Sample 1. In Sample 2, 11 (0.3%) and 30 observations (0.7%) were treated as outliers. We conducted linear regression to examine the relationship between chronological age and VoA measures.

Results

With increasing age, the difference between chronological and subjective age increased – with an accelerated rise observed in younger subjects (Sample 1) compared to middle-aged and older adults (Sample 2) (Figure 1).

In younger adults (Sample 1), the mean difference between chronological and subjective age was approximately 2 years ($SD = 6.58$, Table 1), and we observed a cross-over effect in the mid-20 s (more specifically, at age 24.6). Around this age, individuals started feeling younger than their chronological age. As expected, in middle-aged and older subjects (Sample 2), the difference also increased with increasing age, yielding a mean difference of 7.4 years ($SD = 7.50$, Table 2). The proportional amount of feeling younger (proportional discrepancy score) increased until the late 30 s in Sample 1 and remained rather stable in

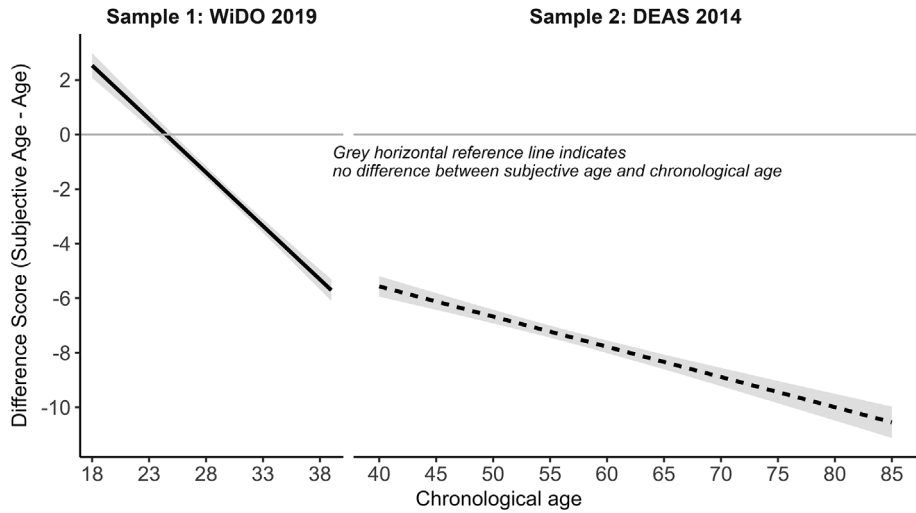


Figure 1. Age discrepancy between subjective age and chronological age. The solid line refers to the sample of young adults (18–39 years) in which younger adults feel older, which switches to feeling younger over the age groups. The dotted lines refer to the sample of middle-aged to older adults, in which the number of those feeling younger increases over the age groups. Light gray shadows represent 95% confidence intervals. WiDO: survey of the Research Institute of the AOK; DEAS: German Ageing Survey.

Table 1. Number of observations, means, standard deviations of key variables, and correlations (Pearson’s ρ) in Sample 1 (WiDO 2019, $N = 3,000$)

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Age	3,000	29.49	6.41	–						
2. SA Difference score	2,946	–1.96	6.58	–.38***	–					
3. SA proportional discrepancy score	2,946	–0.05	0.23	–.35***	.98***	–				
4. SPA Ongoing development	3,000	3.23	0.55	–.06**	–.15***	–.14***	–			
5. SPA Social losses	3,000	1.99	0.65	.09***	.13***	.13***	–.31***	–		
6. SPA Physical losses	3,000	2.63	0.66	–.02	.15***	.14***	–.4***	.55***	–	
7. Age threshold	2,965	63.51	10.52	.18***	–.17***	–.15***	.18***	–.14***	–.21***	–

Note. SPA = Self-perceptions of aging; SA = subjective age. *n*, *M*, and *SD* represent the number of observations, mean, and standard deviation, respectively. *** $p < .001$, ** $p < .01$, * $p < .05$.

Table 2. Number of observations, weighted means, standard deviations of key variables, and weighted correlations (Pearson’s ρ) in Sample 2 (DEAS 2014, $N = 4,349$)

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Age	4,349	62.35	11.48	–						
2. SA Difference score	4,284	–7.39	7.45	–.18***	–					
3. SA proportional discrepancy score	4,284	–0.13	0.14	.03	.96***	–				
4. SPA Ongoing development	4,201	2.97	0.55	–.22***	–.19***	–.24***	–			
5. SPA Social losses	4,193	1.83	0.54	.15***	.18***	.21***	–.40***	–		
6. SPA Physical losses	4,204	2.73	0.54	.06**	.17***	.19***	–.46***	.46***	–	
7. Age threshold	4,081	72.10	8.88	.33***	–.19***	–.12***	.13***	–.17***	–.15***	–

Note. SPA = Self-perceptions of aging, SA = subjective age; *n*, *M*, and *SD* represent the number of observations, mean, and standard deviation, respectively. *** $p < .001$, ** $p < .01$, * $p < .05$.

middle-aged and older adults (Sample 2), which is also in line with our expectations (Figure 2).

The SPA related to *ongoing development* were relatively stable in young adults (Sample 1) and tended to decrease

across the age groups in Sample 2 (Figure 3). However, up to old age, individuals still perceived their aging as somewhat associated with ongoing development, as indicated by a mean value above 2.5 (theoretical scale mean).

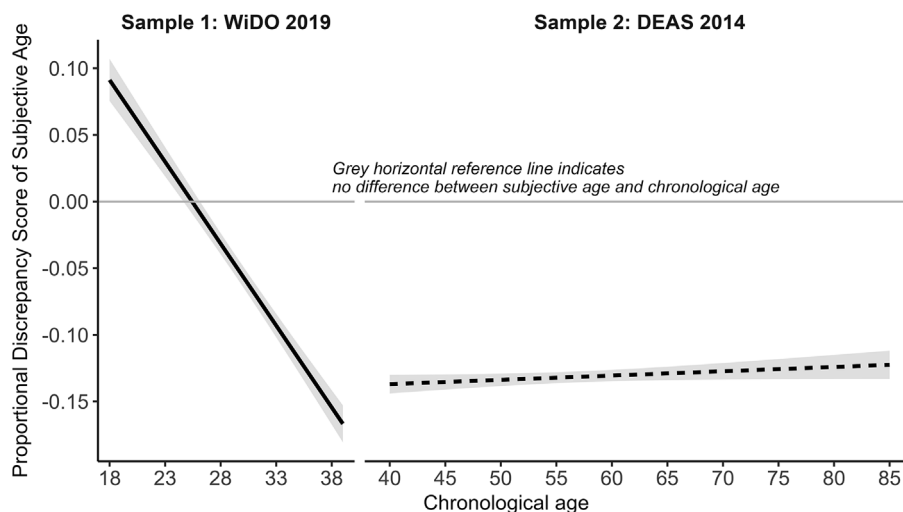


Figure 2. Proportional discrepancy score of subjective age across the adult lifespan. This indicates the proportion a person feels younger or older than their chronological age, additionally divided by chronological age. The light gray shadows represent 95% confidence intervals. WiDO: survey of the Research Institute of the AOK; DEAS: German Ageing Survey.

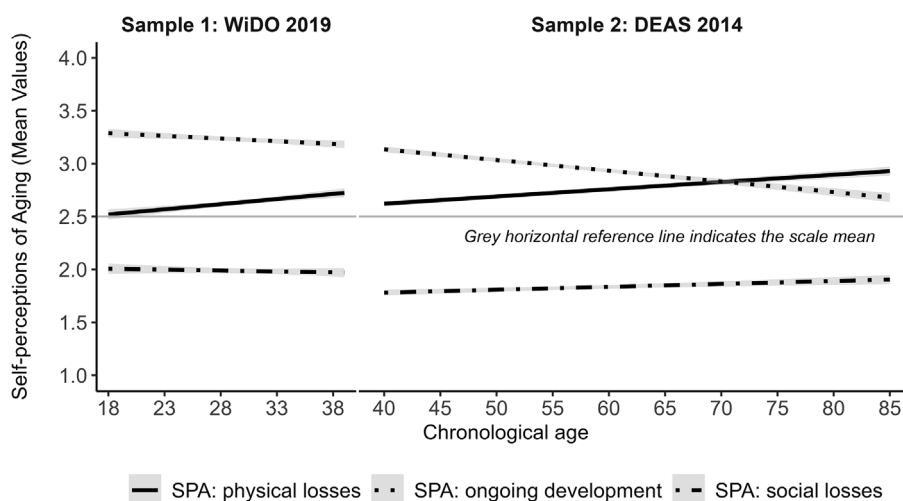


Figure 3. Self-perceptions of aging (SPA) in different life domains across the adult lifespan. The light gray shadows represent 95% confidence intervals. WiDO: survey of the Research Institute of the AOK; DEAS: German Ageing Survey.

Participants generally agreed that aging is associated with *physical losses*, as reflected in a mean score above 2.5 across both samples. SPA related to physical losses increased slightly in both samples across age groups, leading to a higher mean score in the older Sample 2 (Sample 1: $M = 2.63$; Sample 2: $M = 2.73$).

While gain-related SPA prevailed in younger and middle-aged adults, we observed a crossover effect at 70.75, an age at which SPA related to physical losses started to prevail over gain-related SPA. Finally, SPA related to *social losses* were quite similar for both samples, although slightly higher

in Sample 1 ($M = 1.99$) than in Sample 2 ($M = 1.83$), which differed from our expectations. While scores remained nearly constant in Sample 1, we found a slight increase in mean scores in Sample 2.

In Sample 1, the age at which a person is considered “old” was $M = 63.51$ years ($SD = 10.5$), which in Germany more or less represents the age at which people approach retirement. As expected, this consideration is age-dependent (Figure 4), because, in Sample 2, the mean age at which a person is considered old was 72.1 ($SD = 8.88$). The threshold at which a person is considered old thus appears to be higher

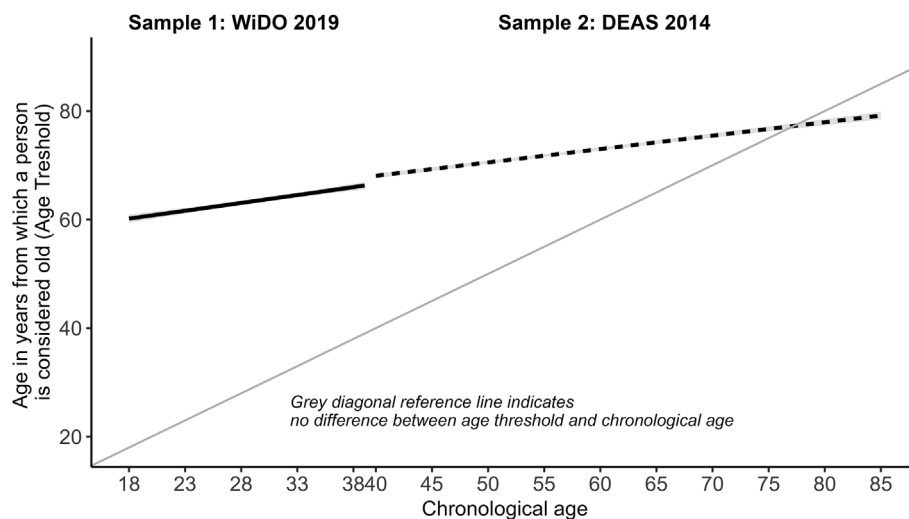


Figure 4. Age threshold across the adult lifespan. This indicates the age from which a person is considered old. The light gray shadows represent 95% confidence intervals. WiDO: survey of the Research Institute of the AOK; DEAS: German Ageing Survey.

for older participants. Not until age 77.03 do adults consider someone their own age as “old.”

Discussion

Over the adult lifespan, views on aging (VoA) are associated with various health outcomes (Westerhof et al., 2023). However, little research exists on differences in various VoA constructs between younger and older age groups. Based on two large-scale representative German datasets with adults between 18–85 years, this study examined the same five VoA indicators for both samples. The present findings support and extend previous findings in several respects.

First, the findings indicate a crossover effect of subjective and chronological age at 24.6, which is very similar, albeit slightly lower, than that found in a previous study (25.5; Galambos et al., 2005). This difference might be because of the present study’s representative samples, which may be less selective than previous convenience samples, which mainly included students. A recent study by Wettstein et al. (2023) of middle-aged and older adults suggests that cohorts born later feel younger by 2% in each decade of birth. This cohort change also might apply in young adulthood. Future studies should thus address whether the crossover effect might indicate historical and social change and cultural differences.

Second, the broad age range from 18 to 85 elucidated that subjective age showed a steeper cross-sectional decrease in younger age groups (Study 1) compared to middle-aged and

older adults (Study 2), with a difference in subjective age of about 8 years between the age of 18 and 39, compared to a difference of about 4 years in feeling younger between 40–85. The crossover effect between the first feeling of getting older in emerging adulthood and feeling younger might partially explain the greater difference in subjective age. The major transition from youth to adulthood, psychosocial maturity, independence from the parental home, and increasing responsibility for one’s job, finances, home, and family (Wood et al., 2018) might contribute to an accelerated need to feel younger. Other potential mechanisms, such as a change in reference points for comparison from the group of adolescents to the group of adults in their late 20 s, have also been proposed (Montepare, 2009). However, the subjective age differences between Sample 1 and Sample 2 could also occur because of different survey methods (online vs. personal interview and questionnaire); they should therefore be further investigated in future studies. As hypothesized – and in accordance with previous studies (e.g., Rubin & Berntsen, 2006) – the proportional score remained stable after age 40, with participants feeling 12.8% younger than their chronological age on average. This corresponds with findings from a large meta-analysis of Pinquart and Wahl (2021), according to which middle-aged and older adults felt about 13% to 18% younger.

Third, SPA referring to ongoing personal development were predominantly positive in all age groups and remained above the theoretical scale mean of 2.5 up to old age, although this view of aging decreased linearly across the different age groups. In contrast, already younger adults rated SPA relating to physical losses above the theoretical scale mean, and the perception that aging is associated

with physical losses further increased across the different age groups into old age. Together, this illustrates that personal aging expectations encompass gains and losses. Yet, on average, SPA related to ongoing development were higher up to the age of around 71 years, at which a crossover effect was observed, meaning that SPA related to physical losses were more prevalent than the perception of ongoing development after this age. This aligns with recent findings by Kaspar and colleagues (2023), who investigated awareness of age-related change in a representative German sample aged 16–93. They found that the ratio between gains and losses started to shift from predominantly perceiving gains to increasing losses after the age of 70. It seems that, while positive expectations regarding ongoing development and gains are present throughout life, in the last quarter of life, losses, especially in terms of health, become more prevalent, and that this occurs across different indicators of views on aging (cf. Diehl & Wahl, 2024). Similar to the measure of awareness of age-related change, SPA, as measured in the present study (via the AgeCog scales), probably reflect individuals' experiences and expectations regarding growing older (not regarding old age), particularly in younger adults. SPA related to social losses clearly differed from this pattern. While we observed no age differences in this loss-related view in the younger age groups (Study 1), we found only a slight increase in social losses with advancing age for the older age groups (Study 2). Unexpectedly, participants in the younger sample reported higher SPA as social losses compared to the older sample. Young adulthood can be a time of increased loneliness (e.g., Luhmann & Hawkey, 2016), which might color expectations of growing older in the future. In addition, the experience of social loss is a very strong stereotype of old age (Pikhartova et al., 2016), which might be especially endorsed by younger people, for whom large social networks are more normative. Future studies should investigate the associations of SPA with developmental tasks in different life phases, considering particular developmental transitions (e.g., leaving the parental home, empty nest, retirement) and potential nonlinear relations. In addition, future studies should examine whether younger respondents mainly think of turning 30 or 40 or really of old age when they answer items that measure SPA.

This is the first study that examined age differences in different SPA constructs across the entire adult lifespan. A longitudinal study that examined *individual changes* in SPA based on the same survey as Study 2 (DEAS sample) supports the present cross-sectional findings across different age groups by showing that the decline in perceptions of ongoing development became increasingly steeper after age 70 and thus at about the same age at which the present study shows a crossover effect of SPA related to continuing development and SPA related to physical losses

(Diehl et al., 2021). However, Diehl et al. (2021) pointed to an increase in social losses, which becomes steeper with age; this finding differs from the present cross-sectional findings, which reflect differences between birth cohorts and should not be interpreted as age trajectories. Cohort differences might result not only from different socialization experiences of the participants and the experience of historic events, such as German reunification, at different ages, but also from the different social standing of age groups in a society at a given historical time, which might color SPA (e.g., Robertson & Weiss, 2018). Future studies should disentangle cohort and longitudinal effects in different age groups in more detail to better understand the developmental dynamics.

Fourth, whereas the crossover effect of subjective age suggests that already young adults in their mid-20 s feel younger than they are, the crossover effect of the age threshold underlines the tendency toward age group dissociation for people up to old age (Weiss & Kornadt, 2018). More concretely, individuals up to the age of 77 tend to avoid belonging to the group of “old people” by setting the age at which somebody is considered “old” higher than their own age. Only those above the age of 77 state, on average, an age threshold that includes their own chronological age. This might mark the transition into the “fourth age” (Baltes & Smith, 2003). However, the age threshold found in the present study might only apply to Germany. According to data from the European Social Survey assessed in 2008 and 2018, the perception of the old age threshold varies significantly between different European countries and is associated both with life expectancy at 65 and the situation of older adults in the labor market (Augustynski & Jurek, 2021). In addition, the latter European study and a German study based on DEAS data suggest cohort changes, that is, an increase in the age threshold toward older age groups (Wettstein et al., 2024). Future studies should thus examine whether a postponement of old age can also be observed in other countries worldwide in which living conditions (e.g., life expectancy, labor market) differ from previously examined studies.

The present study is the first to compare age group differences in five different VoA indicators across a wide age range spanning nearly 70 years. This strength notwithstanding, combining two large-scale surveys also entails several limitations. First, one should interpret the findings with caution, considering the fact that the large age range results from the joint reflection of findings from two different samples instead of one study comprising a large age-span. While we alluded to the possibility of cohort effects in previous sections, our design has another methodological limitation: While both surveys are based on random sampling, they differ in survey years (2019 vs. 2014) and survey method (online survey vs. interview/questionnaire),

which might have biased the findings. However, the relatively small differences in the mean VoA levels between the oldest age group in the younger sample (Study 1) and the youngest age group in the older sample (Study 2) suggest that a comparison between the studies is justified. Another limitation regarding the sample pertains to the upper limit of our sample, which does not entail adults over 85. We might thus have missed an important transition from the “third” to the “fourth” age (Baltes & Smith, 2003) and its potential implications for views on aging. An additional comparison of age stereotypes in both samples would have been desirable but could not be realized in the present study because Study 2 did not assess age stereotypes (DEAS 2014). Another limitation lies in our partially using the same data basis as previously published studies, since several studies on longitudinal or cohort change in SPA (Diehl et al. 2021), subjective age (Wettstein et al., 2023), and age threshold (Wettstein et al., 2024) also drew on the DEAS data. However, the current study focused on one single assessment point of the DEAS, as we wanted to compare the DEAS sample with younger participants from the WIdO survey; nevertheless, our older participants were also part of these studies. Future studies should examine additional countries to better understand the similarities and VoA differences between different cultures. For example, Schönstein et al. (2023) conducted a study in a rural area of Burkina Faso and found smaller differences between chronological and subjective age in middle-aged and older adults in this regional context compared to what we know from Western studies. While this study focused on subjective age, further studies should aim to compare different VoA.

Based on two samples that together encompassed the adult lifespan, the present study takes a first step in this direction by illustrating crossover effects at which people start to feel younger than they are, start to feel as old as the age at which they consider someone old, and finally the age at which loss-related SPA start to gain the upper hand compared to gain-related SPA. Given the profound role that VoA play for behavior toward older people and individual development in later life (Lamont et al., 2015; Wurm et al., 2017), our findings underscore the importance of conceptualizing VoA as a lifelong construct and taking their multidimensionality into account.

This knowledge is paramount to better understanding how VoA develop across the lifespan and how to incorporate VoA into efforts to promote positive development across life. Already early in life, societal VoA lay an important foundation for positive or negative individual VoA (Levy, 2009). The recent efforts launched by the United Nations and the World Health Organization to combat ageism (World Health Organization, 2021), combined with preventative behaviors, healthy lifestyle, and social interactions

and participation in society, may help individuals of all ages to successfully meet the challenges of a society of longevity (Scott, 2021).

References

- Augustynski, I., & Jurek, L. (2021). Being old in the age of aging: Macro-level determinants of change in perception of old age threshold in EU countries. *European Research Studies Journal*, 24(Special Issue 3), 767–784. <https://doi.org/10.35808/ersj/2509>
- Baltes, P. B., & Smith, J. (2003). New frontiers in the future of aging: From successful aging of the young old to the dilemmas of the fourth age. *Gerontology*, 49, 123–135. <https://doi.org/10.1159/000067946>
- Blawert, A., Kornadt, A. E., Schröder, H., Wurm, S., & Zok, K. (2020). Gesund altern. Ergebnisse einer Repräsentativumfrage zu Altersbildern junger Erwachsener [Healthy aging. Results of a representative survey on views on aging in young adults]. *WIdOmonitor*, 17, 1–20.
- Chasteen, A. L., & Cary, L. A. (2015). Age stereotypes and age stigma: Connections to research on subjective aging. In M. Diehl & H.-W. Wahl (Eds.), *Annual Review of Gerontology and Geriatrics, Vol. 35: Subjective aging: New developments and future directions* (pp. 99–119). Springer Publishing Company.
- Chopik, W. J., Bremner, R. H., Johnson, D. J., & Giasson, H. L. (2018). Age differences in age perceptions and developmental transitions. *Frontiers of Psychology*, 9, Article 67. <https://doi.org/10.3389/fpsyg.2018.00067>
- Debreczeni, A. F., & Bailey, P. E. (2021). A systematic review and meta-analysis of subjective age and the association with cognition, subjective well-being, and depression. *Journals of Gerontology: Series B*, 76(3), 371–482. <https://doi.org/10.1093/geronb/gbaa069>
- Diehl, M., & Wahl, H.-W. (2024). Self-perceptions of aging: A conceptual and empirical overview. *Current Opinion in Psychology*, 55, Article 101741. <https://doi.org/10.1016/j.copsyc.2023.101741>
- Diehl, M., Wettstein, M., Spuling, S. M., & Wurm, S. (2021). Age-related change in self-perceptions of aging: Longitudinal trajectories and predictors of change. *Psychology and Aging*, 36(3), 344–359. <https://doi.org/10.1037/pag0000585>
- Galambos, N. L., Turner, P. K., & Tilton-Weaver, L. C. (2005). Chronological and subjective age in emerging adulthood: The crossover effect. *Journal of Adolescent Research*, 20(5), 538–556. <https://doi.org/10.1177/07435584052748>
- Jung, S., Cham, H., Siedlecki, K. L., & Jopp, D. S. (2021). Measurement invariance and developmental trajectories of multidimensional self-perceptions of aging in middle-aged and older adults. *Journals of Gerontology: Series B*, 76(3), 483–495. <https://doi.org/10.1093/geronb/gbz099>
- Jurek, L. (2022). Chronological age and subjective perception of the old-age threshold: An empirical verification of the age-group dissociation effect using European social survey data. *Advances in Gerontology*, 12(1), 14–24. <https://doi.org/10.1134/s2079057022010052>
- Kaspar, R., Schilling, O. K., Diehl, M., Gerstorf, D., Rupprecht, F. S., Sabatini, S., & Wahl, H. W. (2023). Differences in self-perceptions of aging across the adult lifespan: The sample case of awareness of age-related gains and losses. *Psychology and Aging*, 38(8), 824–836. <https://doi.org/10.1037/pag0000783>
- Klaus, D., Engstler, H., Mahne, K., Wolff, J. K., Simonson, J., Wurm, S., & Tesch-Römer, C. (2017). Cohort profile: The German Ageing Survey (DEAS). *International Journal of Epidemiology*, 46(4), 1105–1105 g. <https://doi.org/10.1093/ije/dyw326>

- Kornadt, A. E., Kessler, E.-M., Wurm, S., Bowen, C. E., Gabrian, M., & Klusmann, V. (2020). Views on aging: A life span perspective. *European Journal of Ageing*, 17, 387–401. <https://doi.org/10.1007/s10433-019-00535-9>
- Kornadt, A. E., & Rothermund, K. (2011). Contexts of aging: Assessing evaluative age stereotypes in different life domains. *Journals of Gerontology: Series B*, 66(5), 547–556. <https://doi.org/10.1093/geronb/gbr036>
- Kotter-Grühn, D., Kornadt, A. E., & Stephan, Y. (2016). Looking beyond chronological age: Current knowledge and future directions in the study of subjective age. *Gerontology*, 62, 86–93. <https://doi.org/10.1159/000438671>
- Lamont, R. A., Swift, H. J., & Abrams, D. (2015). A review and meta-analysis of age-based stereotype threat: Negative stereotypes, not facts, do the damage. *Psychology and Aging*, 30(1), 180–193. <https://doi.org/10.1037/a0038586>
- Levy, B. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science*, 18(6), 332–336. <https://doi.org/10.1111/j.1467-8721.2009.01662.x>
- Luhmann, M., & Hawkey, L. C. (2016). Age differences in loneliness from late adolescence to oldest old age. *Developmental Psychology*, 52(6), Article 943. <https://doi.org/10.1037/dev0000117>
- Montepare, J. M. (2009). Subjective age: Toward a guiding lifespan framework. *International Journal of Behavioral Development*, 33(1), 42–46. <https://doi.org/10.1177/0165025408095551>
- Pikhartova, J., Bowling, A., & Victor, C. (2016). Is loneliness in later life a self-fulfilling prophecy? *Aging & Mental Health*, 20(5), 543–549. <https://doi.org/10.1080/13607863.2015.1023767>
- Pinquart, M., & Wahl, H. W. (2021). Subjective age from childhood to advanced old age: A meta-analysis. *Psychology and Aging*, 36(3), 394–406. <https://doi.org/10.1037/pag0000600>
- R Development Core Team. (2022). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing
- Robertson, D. A., & Weiss, D. (2018). Rising above It: Status ambivalence in older adults. *Gerontology*, 64(6), 576–588. <https://doi.org/10.1159/000488389>
- Rubin, D. C., & Berntsen, D. (2006). People over forty feel 20% younger than their age: Subjective age across the lifespan. *Psychonomic Bulletin & Review*, 13(5), 776–780. <https://doi.org/10.3758/BF03193996>
- Schönstein, A., Schlomann, A., Wahl, H.-W., & Bärnighausen, T. (2023). Awareness of age-related change in very different cultural-political contexts: A cross-cultural examination of aging in Burkina Faso and Germany. *Frontiers in Psychiatry*, 13, Article 928564. <https://doi.org/10.3389/fpsyt.2022.928564>
- Scott, A. J. (2021). The longevity society. *Lancet Healthy Longev*, 2(12), e820–e827. [https://doi.org/10.1016/S2666-7568\(21\)00247-6](https://doi.org/10.1016/S2666-7568(21)00247-6)
- Stephan, Y., Sutin, A. R., Wurm, S., & Terracciano, A. (2021). Subjective aging and incident cardiovascular disease. *Journals of Gerontology: Series B*, 76(5), 910–919. <https://doi.org/10.1093/geronb/gbaa106>
- Steverink, N., Westerhof, G. J., Bode, C., & Dittmann-Kohli, F. (2001). The personal experience of aging, individual resources, and subjective well-being. *Journals of Gerontology: Series B*, 56(6), 364–373. <https://doi.org/10.1093/geronb/56.6.P364>
- Tully-Wilson, C., Bojack, R., Millea, P. M., Stallman, H. M., Allen, A., & Mason, J. (2021). Self-perceptions of aging: A systematic review of longitudinal studies. *Psychology and Aging*, 36(7), 773–789. <https://doi.org/10.1037/pag0000638>
- Weiss, D., & Kornadt, A. E. (2018). Age-stereotype internalization and dissociation: Contradictory processes or two sides of the same coin? *Current Directions in Psychological Science*, 27(6), 447–483. <https://doi.org/10.1177/0963721418777743>
- Weiss, D., & Weiss, M. (2019). Why people feel younger: Motivational and social-cognitive mechanisms of the subjective age bias and its implications for work and organizations. *Work*, *Aging and Retirement*, 5(4), 273–280. <https://doi.org/10.1093/workar/waz016>
- Westerhof, G. J., Nehr Korn-Bailey, A. M., Tseng, H. Y., Brothers, A., Siebert, J. S., Wurm, S., Wahl, H. W., & Diehl, M. (2023). Longitudinal effects of subjective aging on health and longevity: An updated meta-analysis. *Psychology and Aging*, 38(3), 147–166. <https://doi.org/10.1037/pag0000737>
- Wettstein, M., Kornadt, A. E., & Wahl, H. W. (2022). Awareness of age-related changes among middle-aged and older adults: Longitudinal trajectories, and the role of age stereotypes and personality traits. *Frontiers in Psychiatry*, 13, Article 902909. <https://doi.org/10.3389/fpsyt.2022.902909>
- Wettstein, M., Park, R., Kornadt, A. E., Wurm, S., Ram, N., & Gerstorf, D. (2024). Postponing old age: Evidence for historical change toward a later perceived onset of old age. *Psychology and Aging*. Advance online publication. <https://doi.org/10.1037/pag0000812>
- Wettstein, M., Wahl, H.-W., Drewelies, J., Wurm, S., Huxhold, O., Ram, N., & Gerstorf, D. (2023). Younger than ever? Subjective age is becoming younger and remains more stable in middle-aged and older adults today. *Psychological Science*, 34(6), 647–656. <https://doi.org/10.1177/09567976231164553>
- World Health Organization. (2021). *Global report on ageism*. WHO.
- Wood, D., Crapnell, T., Lau, L., Bennett, A., Lotstein, D., Ferris, M., & Kuo, A. (2018). Emerging adulthood as a critical stage in the life course. In N. Halfon, C. B. Forrest, R. M. Lerner, & E. M. Faustman (Eds.), *Handbook of life course health development* (pp. 123–143). Springer International Publishing. https://doi.org/10.1007/978-3-319-47143-3_7
- Wurm, S., Diehl, M., Kornadt, A., Westerhof, G., & Wahl, H.-W. (2017). How do views on aging affect health outcomes in adulthood and late life? Explanations for an established connection. *Developmental Review*, 46, 27–43. <https://doi.org/10.1016/j.dr.2017.08.002>
- Wurm, S., Tesch-Römer, C., & Tomasik, M. (2007). Longitudinal findings on aging-related cognitions, control beliefs, and health in later life. *Journals of Gerontology: Series B*, 62(3), P156–P164. <https://doi.org/10.1093/geronb/62.3.P156>

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Conflict of Interest

The authors declare no conflict of interest.

Author Note

Susanne Wurm: Lead role in conceptualization, writing – original draft, writing – review and editing, supporting role in project administration, supporting role in formal analysis. Moritz Gehring: Lead role in formal analysis, supporting role in review – original draft, writing – review and editing. Anne Blawert: Supporting role in conceptualization, statistical analysis, writing – original draft. Klaus Zok: Supporting role in project administration, supporting role in conceptualization, statistical analysis – original draft. Helmut Schröder: Lead role in project administration, supporting role in conceptualization, supporting role in review – original draft. Anne E. Kornadt: Lead role in conceptualization, writing – original draft, writing – review and editing, supporting role in formal analysis and project administration. Data from the German Ageing Survey (DEAS) as well as study materials (questionnaires, interview documentation) can be obtained via the Research Data Centre of the German Centre of Gerontology (<https://www.dza.de/en/research/fdz/access-to-data>). Data from the WldO survey as well as study materials (questionnaires) can be obtained from the WldO. The analyses we conducted were not preregistered.

Participants in the study of the German Ageing Survey gave their informed consent after receiving detailed written information about the aims and procedures of the study. Participants in the WldO survey gave their informed consent after receiving detailed online information about the aims and procedures of the study before starting to complete the online survey. No ethics approval was required for the implementation of both surveys and was therefore not requested.

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