The Impact of Age Stereotypes on Self-perceptions of Aging Across the Adult Lifespan

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Objectives. Individuals' perceptions of their own age(ing) are important correlates of well-being and health. The goals of the present study were to (a) examine indicators of self-perceptions of aging across adulthood and (b) experimentally test whether age stereotypes influence self-perceptions of aging.

Method. Adults 18–92 years of age were presented with positive, negative, or no age stereotypes. Before and after the stereotype activation, aging satisfaction and subjective age were measured.

Results. The activation of positive age stereotypes did not positively influence self-perceptions of aging. Quite the contrary, priming middle-aged and older adults in good health with positive age stereotypes made them feel older. After the activation of negative age stereotypes, older adults in good health felt older and those in bad health wanted to be younger than before the priming. Even younger and middle-aged adults reported younger desired ages after the negative age stereotype priming. Persons in bad health also thought they looked older after being primed with negative age stereotypes.

Discussion. Taken together, although we find some support for contrast effects, most of our results can be interpreted in terms of assimilation effects, suggesting that individuals integrate stereotypical information into their self-evaluations of age(ing) when confronted with stereotypes.

Key Words: Age stereotypes—Aging satisfaction—Labeling theory—Resilience theory—Self-perceptions of aging—Social comparison—Subjective age.

In Western societies, individuals are continuously confronted with stereotypical beliefs about older adults, often depicting them as lonely or sick. Importantly, not just younger persons but also individuals belonging to this stereotyped group often hold age stereotypes (e.g., Hummert, Garstka, Shaner, & Strahm, 1994). This can be problematic in so far as the activation of self-relevant age stereotypes can influence older adults’ performance (e.g., Hausdorff, Levy, &Wei, 1999; Hess, Auman, Colcombe, & Rahhal, 2003) and may negatively impact their self-view and well-being (Rothermund, 2005; Rothermund & Brandstätter, 2003). The present study extends previous research by examining whether the activation of age stereotypes also influences self-perceptions of aging.

Self-perceptions of Aging in the Context of Successful Aging

“Self-perceptions of aging” refer to individuals’ perceptions of their own age and aging (Levy, 2003; Sneed & Whitbourne, 2005). In the present study, we included two indicators of self-perceptions of aging: subjective age and aging satisfaction. “Subjective age” is a multidimensional construct assessing facets, such as felt age, perceived age, or desired age (Kastenbaum, Derbin, Sabatini, & Artt, 1972; Montepare, 2009). Whereas adolescents and younger adults often feel or want to be older than they actually are, middle-aged and older adults mostly report younger subjective ages (e.g., Galambos, Turner, & Tilton-Weaver, 2005; Rubin, & Berntsen, 2006). “Aging satisfaction” refers to the subjective evaluation of one’s satisfaction with one’s own aging process. Across the lifespan, individuals are relatively satisfied with their aging, at least until relatively late in life or in proximity to death (Kleinsephn-Ammerlahn, Kotter-Grühn, & Smith, 2008; Kotter-Grühn, Kleinsephn-Ammerlahn, Gerstorf, & Smith, 2009).

Many studies have provided empirical evidence for the importance of self-perceptions of aging in the context of successful aging (cf. Filipp, Ferring, & Klauser, 1989). Given that positive self-perceptions of aging are associated with favorable outcomes, such as higher well-being, better health, or longevity (e.g., Levy, Slade, & Kasl, 2002; Steverink, Westerhof, Bode, & Dittmann-Kohli, 2001; Uotinen, Rantanen, & Suutama, 2005), the question arises as to whether and how self-perceptions of aging can be influenced. Is there a way to make individuals feel younger and more satisfied with aging? One means for manipulating self-perceptions of aging in an experimental setting might be through the activation of positive or negative age stereotypes. Whereas highlighting the positive or downgrading the negative aspects of aging might be strategies to positively influence self-perceptions of aging, focusing individuals’ attention on the negative aspects of aging might negatively influence their self-perceptions of aging.
Linking Self-perceptions of Aging and Age Stereotypes

Although old age is linked to both positive (e.g., wise) and negative (e.g., senile) stereotypes, negative attributes clearly outweigh positive ones (Hummert, 1990; Kite & Johnson, 1988). Both the activation of age stereotypes and age-related cues influence performance and behavior and are related to health and longevity, particularly in those who belong to the stereotyped group (Hess, 2006; Horton, Baker, & Deakin, 2007; Hsu, Chung, & Langer, 2010). There are at least two routes through which stereotypes can influence evaluations and performances (cf. Dijksterhuis & Bargh, 2001; Pinquart, 2002). “Labeling theory” suggests that when confronted with age stereotypes, older adults integrate the stereotypical information into their self-evaluations and therefore show assimilation effects (cf. Rothermund, 2005, and Rothermund & Brandstädter, 2003, who talk about the contamination/infusion hypothesis in this context). Findings that the priming of negative age stereotypes in older adults results in more age-typical performance such as slower gait or worse memory performance (e.g., Hess, Hinson, & Statham, 2004; Levy, 1996) support the assimilation effect idea. Support for labeling theory also exists regarding the influence of age stereotypes on subjectively rated concepts. Hess and Hinson (2006) showed that after being primed with negative age stereotypes, participants reported lower memory controllability and more aging-related concerns than before the priming (i.e., they showed assimilation effects). The opposite pattern emerged when primed with positive age stereotypes. In another series of studies, the induction of aging-related phenomena caused middle-aged and older adults to feel older than individuals in control conditions (Eibach, Mock, & Courtney, 2010).

“Resilience theory,” on the other hand, suggests that a confrontation with negative stereotypes or negative age-related information leads to more positive self-perceptions or performances. This contrast effect is proposed to be the result of social comparison processes in which individuals deliberately contrast themselves from stereotypes or negative self-relevant information. The idea is that when people feel threatened (e.g., by negative stereotypes) they engage in downward social comparisons (i.e., comparing oneself to those who are worse off) to restore a positive self-image (e.g., Wills, 1981). In the context of age stereotype priming, support for resilience theory and contrast effects comes from Pinquart (2002) who demonstrated that the perception of competence improved in older adults who were primed with negative information about competence, whereas no changes occurred in persons who received neutral information.

Whereas the idea that individuals actively contrast themselves from stereotypes (or other people) suggests that individuals are aware of the fact that they are confronted with stereotypes, awareness of stereotype priming might not be necessary (though possible) in the context of labeling theory. Therefore, it could be speculated that high levels of stereotype prime awareness result in contrast effects, whereas low to moderate levels result in assimilation effects (cf. Strack, Schwarz, Bless, Kübler, & Wänke, 1993).

The Present Study

The main goals of this study were to (a) examine various indicators of self-perceptions of aging across the adult lifespan and (b) investigate the effects of positive and negative age-stereotypes on self-perceptions of aging. Our hypotheses regarding self-perceptions of aging across the lifespan are based on the findings from previous studies (e.g., Kleinspehn-Ammerlahn et al., 2008; Montepare, 1991; Montepare & Lachman, 1989). Note that although we formulate our hypotheses in terms of age groups to facilitate communication, age was a continuous variable in most analyses. Specifically, our hypotheses are:

H1a) From middle age onward, individuals report that they feel, look, and desire to be younger than they actually are.

H1b) Younger adults report subjective ages that are relatively similar to or older than their real age.

H1c) Aging satisfaction does not differ by age.

As will be described in more detail later, we used a stereotype priming procedure that was framed as an impression formation task, which should automatically activate age stereotypes in the participants (cf. Dijksterhuis, Spears, & Lépinasse, 2001) without them being fully aware of the fact that stereotypes are being primed. Based on our argumentation that minimal or moderate awareness of age stereotype priming is more likely to result in assimilation effects, our hypotheses are derived from propositions of labeling theory. Specifically, in response to the priming with age stereotypes, we expected assimilation effects for older adults’ self-perceptions of aging but no effects for younger and middle-aged adults, as age stereotypes should be of no or limited relevance to these age groups. Because health explains interindividual differences in self-perceptions of aging (e.g., Levy, Slade, & Kasl, 2002), we included physical health as a moderator, suggesting that individuals in bad health are particularly susceptible to the negative effects of age stereotypes on self-perceptions of aging. The following hypotheses were tested:

H2a) After being primed with negative age stereotypes, older but not middle-aged and younger adults report older felt and perceived ages and are less satisfied with their aging than before the priming. The opposite pattern is expected for positive age stereotype priming.

H2b) After being primed with negative age stereotypes, middle-aged and older but not younger adults want to be younger than before the priming. Priming with positive age stereotypes does not lead to changes in desired age.

H2c) The effect of the negative priming is particularly pronounced in persons in bad health. That is, health moderates the effect of age stereotypes on self-perceptions of aging.

Hypothesis 2b is derived from the idea that focusing persons’ attention on the negative aspects of aging should
result in younger desired ages because individuals wish to “gain years” before they reach old age themselves. However, there is no rationale to expect that focusing people’s attention on the positive aspects of aging makes them want to be older.

**Method**

**Participants**

The sample consisted of 183 adults aged 18–92 years ($M_{\text{age}} = 48.72, SD = 23.16$) comprising 60 younger adults (18–35 years, $M_{\text{age}} = 22.05, SD = 5.58; 52\%$ women), 62 middle-aged adults (36–60 years, $M_{\text{age}} = 47.50, SD = 6.48; 56\%$ women), and 61 older adults (61–92 years, $M_{\text{age}} = 76.20, SD = 8.60; 54\%$ women). We recruited participants through newspaper advertisements and flyers. A large number of adults older than the age of 75 were recruited and tested in a local retirement community. About two thirds of younger adults were college students in an introductory psychology class, who participated in the study as part of an optional course requirement. All other participants received $15 per hour as compensation. On average, participants reported 14.95 years of education ($SD = 2.54$), with education being positively related to age, $r = .46, p < .001$. Age was negatively related to processing speed, $r = -.65, p < .001$, and physical health, $r = -.39, p < .001$.

Using a between-subjects design, we randomly assigned participants to one of three stereotype-priming conditions: positive, negative, or neutral. Each condition included 61 persons, relatively equally distributed across age group and sex. Age Group (3) × Condition (3) analyses of variance (ANOVAs) conducted on the background measures revealed no significant Age × Condition interactions. One significant main effect was found for Condition: Persons in the control condition had lower physical health scores than persons in the negative condition, $F(2, 162) = 3.57, p = .03$, $\eta^2_p = .04$. These differences are controlled for by planned inclusion of this variable in our main analyses testing the effects of stereotype activation on self-perceptions of aging.

**Material**

Participants in the experimental conditions were primed with either positive or negative age stereotypes. Participants in the control condition did not receive any priming. Using a procedure that successfully activated age stereotypes in previous studies (Dijksterhuis et al., 2001), our age stereotype priming was framed as an impression formation task. We told participants that they see descriptions of five persons and their task was to form an impression of this group of people. Each person description included a photograph of a face of an older woman (taken from The Center for Vital Longevity Face Database; Minear & Park, 2004) and a short summary of relevant characteristics (see Supplementary Material for examples). Although inclusion of both visual (photograph) and descriptive (text) information may complicate identification of the specific source of any observed priming effects, we included both to maximize the probability of successfully activating age stereotypes and to increase ecological validity. Photographs depicted smiling faces in the positive condition and sad or grumpy faces in the negative condition. Targets were described by mainly positive attributes in the positive condition and negative attributes in the negative condition. To further increase the probability to induce age stereotypes, we included two age-stereotypical words derived from the Images of Aging Scale in the text of each description (Levy, Kasl, & Gill, 2004). Words in the positive condition were active, well-groomed, wise, full of life, capable, positive outlook, healthy (used in two descriptions), family-oriented, and will to live. Words in the negative condition were walks slowly, wrinkled, senile, dying, helpless, grumpy, sick, lonely, given-up, and depressed. (This last word is not from the Images of Aging Scale.)

After reading the target descriptions, participants rated each target on a scale from 1 (not at all) to 5 (very much) in terms of four characteristics: health, mental fitness, happiness, and activity level. We compared those ratings as a function of condition to test whether the targets were in fact perceived as positive or negative, according to their experimental condition. Averaged across all five targets per condition, targets in the positive condition as compared with those in the negative condition were perceived as more mentally fit ($M_{\text{pos}} = 4.41, SD = 0.45, M_{\text{neg}} = 2.42, SD = 0.63, p < .001$, $\eta^2_p = .77$), healthier ($M_{\text{pos}} = 4.23, SD = 0.56, M_{\text{neg}} = 2.46, SD = 0.51, p < .001$, $\eta^2_p = .74$), more active ($M_{\text{pos}} = 4.09, SD = 0.56, M_{\text{neg}} = 2.00, SD = 0.44, p < .001$, $\eta^2_p = .81$), and happier ($M_{\text{pos}} = 4.41, SD = 0.53, M_{\text{neg}} = 1.73, SD = 0.52, p < .001$, $\eta^2_p = .87$); multivariate test: $F(4, 116) = 210.75, p < .001$, $\eta^2_p = .88$.

**Procedure**

Before coming to the laboratory, participants received several questionnaires in the mail. They filled them out at home and brought them to their appointment. These questionnaires assessed sociodemographic characteristics, health, and self-perceptions of aging (used as the baseline measure). After arriving in the laboratory, participants signed an informed consent form and completed tasks unrelated to this report. Data collection in the subsequent second phase of the study was mostly computerized. After responding to several self-report measures (not reported here), participants in the positive and negative condition received the aforementioned stereotype priming. After the priming, self-perceptions of aging were assessed (used as the postinduction measure). Participants in the control condition did not receive any stereotype induction before responding to the aging-related questionnaires. After completing other tasks not relevant to this report, participants were debriefed and compensated.
Middle-aged adults & Older adults

Aging satisfaction pretest & .10 & .29*** & 3.80 (0.71) & 3.72 (0.80) & 3.67 (0.81)
Aging satisfaction post-test & .09 & .24** & 3.84 (0.78) & 3.75 (0.79) & 3.76 (0.77)
Felt age pretest & −.43*** & −.10 & 0.05 (0.22) & −0.17 (0.17) & −0.16 (0.15)
Felt age post-test & −.43*** & −.03 & 0.03 (0.19) & −0.15 (0.17) & −0.15 (0.12)
Desired age pretest & −.56*** & .16 & 0.04 (0.22) & −0.31 (0.20) & −0.34 (0.19)
Desired age post-test & −.59*** & .21** & 0.03 (0.18) & −0.33 (0.19) & −0.33 (0.17)
Perceived age pretest & −.24*** & −.03 & −0.04 (0.11) & −0.14 (0.12) & −0.10 (0.08)
Perceived age post-test & −.28*** & −.06 & −0.04 (0.11) & −0.13 (0.11) & −0.11 (0.08)

Notes. N = 183. Means for subjective age (felt, desired, and perceived age) represent proportional discrepancy scores calculated as follows: (subjective age–chronological age)/chronological age. A positive score indicates an older subjective age relative to one’s chronological age; for example, a score of .05 indicates that individuals feel 5% older than they actually are. A negative score indicates a younger subjective age relative to one’s chronological age; for example, a score of −.16 indicates that individuals feel 16% younger than they actually are.

*p < .05, **p < .01, ***p < .001.

Measures

Aging satisfaction was assessed with a five-item subscale of the Philadelphia Geriatric Center Morale Scale (Lawton, 1975; sample item: “I have as much pep as I had last year”). Items were rated on a 5-point scale (range 1–5). High scores indicate high satisfaction with aging. Internal consistencies (Chronbach’s alpha) were .68 and .71 for the pretest and post-test measure, respectively.

Subjective age comprised measures of felt age (“How old do you feel?”), desired age (“If you could choose your age, how old would you want to be?”), and perceived age (“How old would you say you look?”), each assessed with a single item. The proportional discrepancy scores (see Data Preparation section) for all three subjective age indicators were related to each other at both assessment points (pretest r = .35−.45, ps < .001; post-test r = .48−.49, ps < .001) but were treated separately due to different patterns of change and relationships with other variables. Changes from pre- to post-test in felt and perceived age were related to each other (r = .21, p = .005) but unrelated to changes in desired age (r = −.06 to .08, ps > .30). Feeling older than one’s actual age was related to lower aging satisfaction (pretest r = −.32; post-test r = −.18, all ps < .05). Desired and perceived age were unrelated to aging satisfaction (r = −.02 to .11, ps > .14). Changes in aging satisfaction were marginally related to changes in felt age (r = −.15, p = .053) but unrelated to changes in perceived or desired age (r = −.07 to −.02, ps > .33).

Physical health was assessed by the SF-36 Health Survey (Ware, 1993). Following the instructions in the SF-36 manual, we created and used norm-based T-scores (M = 49.77, SD = 8.50, range: 20.5–62.83).

Data Preparation

For each indicator of subjective age for each assessment point (i.e., before and after the stereotype activation), we calculated “proportional discrepancy scores” by subtracting participants’ chronological age from their subjective age and dividing these difference scores by chronological age: (subjective age–chronological age)/chronological age (cf. Rubin & Berntsen, 2006). Proportional discrepancy scores can also be expressed as percentages for easier communication (e.g., a score of +0.20 means that persons feel 20% older and a score of −0.20 means that persons feel 20% younger relative to their actual age).

RESULTS

Self-perceptions of Aging Across the Adult Lifespan

For our first research question, we focused on the pretest data. As shown in Table 1, the proportional discrepancy scores for subjective age were negatively related to chronological age. With increasing age, participants increasingly felt, wanted to be, and said they look proportionally younger than their actual age. For ease of communication and for a more detailed exploration of this relationship, we split participants into three age groups (see Method section). Younger adults felt 5% older, whereas middle-aged and older adults felt 16%–17% younger than they were. Younger adults wanted to be 4% older, whereas middle-aged and older adults wanted to be 31%–34% younger than their real age. Younger adults thought that they looked 4% younger than their chronological age, as compared with 14% in middle-aged adults and 10% in older adults. Univariate ANOVAs for each subjective age indicator yielded a significant effect of age group, ps < .001, η²p = .13–.43. Scheffé post hoc tests comparing all age groups to each other revealed that younger adults’ subjective age proportional discrepancy scores differed from those of middle-aged and older adults, but no differences emerged between middle-aged and older adults. Aging satisfaction was not correlated with age.

Do Self-perceptions of Aging Change After the Activation of Age Stereotypes?

For each indicator of self-perceptions of aging, a repeated measures ANOVA was conducted with time (2: before and
after stereotype activation) as within-subjects factor and condition (3: control, positive, negative), age, and health (both continuous variables, centered at a mean of 0) as between-subjects factors. We controlled for potential nonlinear relationships between age and the dependent variables by including the quadratic term of age in our analyses. This did not change our results, and we therefore report the results of analyses that include the linear age term only.

For felt age, we found significant effects of Time, $F(1, 154) = 4.47, p = .036, \eta_p^2 = .03$; Time $\times$ Age, $F(1, 154) = 4.28, p = .040, \eta_p^2 = .03$; and Time $\times$ Condition $\times$ Age $\times$ Health, $F(3, 154) = 3.19, p = .025, \eta_p^2 = .06$. To decompose the interactions including the continuous variables age and health, we estimated effects and scores for felt age at representative points (mean age and health, mean age and health $\pm 1 SD$) of the sample distribution. For age, the mean corresponds to middle-aged adults, mean $- 1 SD$ represents younger adults, mean $+ 1 SD$ represents older adults. These effects can be summarized as follows: Irrespective of condition and health, younger adults, on average, showed no change in their felt age, $p_s > .81$. Middle-aged adults in average health and above average health felt older after the priming with positive age stereotype than before, $ps < .036$. Older adults in good health felt older after the stereotype activation in the negative and positive condition, $ps < .008$ (see Figure 1). Including sex as an additional factor did not change the results. Note that there were no significant differences between conditions (for the complete sample and for each age group) for any indicator of subjective age at baseline, $Fs < 1.12$.

For desired age, significant effects emerged for Time, $F(1, 155) = 9.12, p = .003, \eta_p^2 = .06$; Time $\times$ Age, $F(1, 155) = 5.44, p = .021, \eta_p^2 = .03$; Time $\times$ Condition, $F(2, 155) = 13.62, p < .001, \eta_p^2 = .15$; Time $\times$ Condition $\times$ Age, $F(2, 155) = 6.69, p = .002, \eta_p^2 = .08$; Time $\times$ Health, $F(1, 155) = 16.58, p < .001, \eta_p^2 = .10$; Time $\times$ Health $\times$ Condition, $F(2, 155) = 17.73, p < .001, \eta_p^2 = .19$; and Time $\times$ Health $\times$ Condition $\times$ Age, $F(3, 155) = 7.45, p < .001, \eta_p^2 = .13$. To disentangle these interactions including the continuous variables health and age, we estimated the effects at representative points (mean, mean $\pm 1 SD$) of the sample distribution. The Time $\times$ Condition interaction was significant for young and old adults in bad health and for middle-aged adults in bad and average health, $ps < .027$. The effects revealed that on average, participants, especially those in bad health, reported a younger desired age after being primed with negative age stereotypes than before the stereotype activation. Figure 2 illustrates this effect for middle-aged adults (mean of age) in bad health. The effect looks similar for younger and older adults. Including sex as a between-subjects factor did not alter these results.

For perceived age, we found no significant main or interaction effects. However, when we included sex as a between-subjects factor, we found significant effects for Time $\times$ Health, $F(1, 147) = 4.40, p = .038, \eta_p^2 = .03$ and Time $\times$ Health $\times$ Condition, $F(2, 147) = 3.32, p = .039, \eta_p^2 = .04$. Decomposition of the interactions (as described earlier) revealed that the Time and Time $\times$ Condition effects were only significant for persons in bad health, $ps < .033$. As can be seen in Figure 3, those effects indicate that persons with lower health scores but not those with higher health scores reported older perceived ages after being primed with negative age stereotypes than before. The changes in the positive and control condition were not significant. The hypothesized Time $\times$ Condition $\times$ Age interaction was not significant, $F(2, 147) = 1.21, p = .30 \eta_p^2 = .02$, indicating that this effect was not age specific.

For aging satisfaction, we found no significant main effects for time, age, or condition, $ps > .25$. Most importantly, contrary to our hypothesis, the Time $\times$ Condition $\times$ Age interaction was not significant, $F(2, 154) = 0.48, p = .62 \eta_p^2 = .006$.
Discussion

Age-Related Differences in Self-perceptions of Aging

One goal of this study was to extend previous research on self-perceptions of aging by examining multiple indicators of subjective age and aging satisfaction across the adult lifespan. Supporting our hypotheses, we found that whereas younger adults felt and wanted to be older than they were, middle-aged and older adults felt and wanted to be younger and also thought they look younger than their actual age. Partly replicating findings by Rubin and Berntsen (2006), no differences between middle-aged and older adults’ proportional discrepancy scores for subjective age emerged. Note that this means that, with age, participants reported increasingly younger subjective ages (cf. Kastenbaum et al., 1972; Montepare & Lachman, 1989). For instance, whereas middle-aged adults on average wanted to be 15 years younger, older adults wanted to be 25 years younger than their actual age. In the present study, we used proportional discrepancy scores though, because they take into account that a discrepancy score might have different meanings depending on the age of a person. Interestingly, on average, older adults did not report an overly young desired age. Middle age but not young age seemed to be most desirable for older participants. Although younger adults, on average, felt and wanted to be older than their actual age, they thought they look younger than they were. Thus, already in young adulthood a bias toward a young physical appearance can be observed.

In contrast to the age-related differences in subjective age, but in line with our hypothesis, participants across all ages reported being relatively satisfied with their aging process. Consistent with previous studies (e.g., Infurna, Gerstorf, Roberton, Berg, & Zarit, 2010), even older adults were still positive about their age(ing). This stability of aging satisfaction speaks for older adults’ ability to adapt to potential (negative) age-related changes.

The Impact of Age Stereotypes on Self-perceptions of Aging

This study was primarily motivated by the question whether the activation of positive age stereotypes can foster positive self-perceptions of aging. Can we make people feel younger and more satisfied with their aging when focusing their attention to the positive aspects of aging? Unfortunately, the answer to this question in this study is no. When we primed individuals with positive age stereotypes, they did not report younger subjective ages and were not more satisfied with their aging than before the priming. On the contrary, middle-aged and older adults in good health felt older after being primed with positive age stereotypes. We speculate that this contrast effect could result from “upward social comparisons.” That is, middle-aged and older adults in good health may typically feel much younger than they are. When they see pictures of happy older adults and read very positive descriptions of old age (as used in the positive stereotype activation), a comparison to this positive group might put the perception of their own aging into perspective and they might no longer feel that young. Thus, this contrast effect might reflect an adjustment in that the positive information permits people to see themselves more accurately in terms of age. It might also suggest that middle-aged and older adults realize that it is acceptable to be their actual age, which is reflected in a lower discrepancy between their real and felt age. Consistent with previous research (e.g., Hess et al., 2004; Levy, 1996), no stereotype priming effects were found for younger adults’ felt age. This can most likely be explained by a lack of personal relevance of age stereotypes.

Whereas our findings in the positive priming condition could be interpreted in terms of social comparison theory and contrast effects, our findings in the negative priming condition are more in line with the idea of assimilation effects. According to social comparison theory, priming with negative age stereotypes should have resulted in downward social comparisons, which, in turn, should have led to feeling even younger. However, similar to findings by Eibach and colleagues (2010), we found that the activation of negative age stereotypes had negative effects on several indicators of self-perceptions of aging. First, older adults in good health felt older after being exposed to negative stereotypes. Note that the effect of health in this context is contrary to our expectations. Second, young, middle-aged, and older adults, particularly those in bad health, reported a younger desired age after being primed with negative age stereotypes than before the priming. That is, when confronted with negative information about old age, the desire to be young increased. It is interesting that, partly in contrast to our hypothesis, this effect already emerged in young and middle-aged adults. It might be that the anticipation of negative age-related changes increased the desire to not reach old age and the associated negative characteristics. The fact that this pattern was pronounced in persons with health problems suggests that they might be more likely to relate to the negative
descriptions provided in the priming, thereby increasing the fear of aging and their desire to stay young. Finally, after being primed with negative age stereotypes, persons in bad health reported older perceived ages than before the priming. That is, the typical positive bias toward one’s own age estimation decreased when being confronted with negative descriptions of old age. As for desired age, this effect surprisingly emerged in all age groups.

Together, these results demonstrate that negative age stereotypes not only influence behavioral indicators such as memory performance (as shown in many studies; cf. Horton, Baker, Pearce, & Deakin, 2008) but also subjective evaluations. In line with notions of labeling theory, we speculate that the stereotypical negative information about old age might be incorporated into the self-view of middle-aged and older adults, leading to more negative perceptions of their own aging (cf. Rothermund, 2005). In sum, partly in contrast to our expectation that assimilation effects exist under both positive and negative age stereotype conditions, we only found assimilation effects for negative age stereotypes. Although this is in accordance with previous studies (e.g., Stein, Blanchard-Fields, & Hertzog, 2002), it should be noted that some studies did find positive effects of positive age stereotypes on performance and attitudes (e.g., Hess & Hinson, 2006; Levy, Slade, May, & Caracciolo, 2006). In contrast, we found some evidence for negative effects of positive age stereotypes, which might be explained by upward social comparison mechanisms.

Our findings are of practical relevance, as an exposure to negative age stereotypes in the form of negative societal images of old age (e.g., Hummert et al., 1994) might negatively impact individuals’ perception of their own aging. The results of the present study further suggest that even younger and middle-aged adults are negatively influenced. This is of particular societal importance in so far as more pessimistic self-perceptions of aging are related to lower well-being or health and even shorter survival times (e.g., Steverink et al., 2001; Levy, Slade, Kunkel, & Kasl 2002).

Limitations and Future Outlook

Because of its cross-sectional nature, the present study can only inform us about age-related differences rather than age-related changes in self-perceptions of aging. Given that most studies have examined only some indicators of self-perceptions of aging, primarily in old age, a longitudinal investigation of different indicators across adulthood is desirable.

When interpreting our results, effect sizes and the effectiveness of our stereotype activation procedure need to be considered. Given the mostly small effect sizes, our results should be considered with caution, and replications are necessary. In addition, more research is necessary to determine how long priming effects can be maintained. One limitation in the negative condition is that the target descriptions were not exclusively negative. Descriptions that are more pessimistic might produce even stronger effects. The fact that the priming with positive age stereotypes only produced few effects may be due to (a) positive age stereotypes in fact not influencing self-perceptions of aging and/or (b) the failure to manipulate positive age stereotypes with our priming procedure. Previous studies used a variety of primings and different procedures produced somewhat different results. Thus, a different form of positive age stereotype priming might influence self-perceptions of aging. Consequently it seems worthwhile to develop and test alternative priming techniques. It is also possible that the type of stereotype priming determines whether participants show either assimilation or contrast effects. For instance, the same stereotypic information may lead to both contrast and assimilation effects depending on (a) the awareness of being primed, (b) the extent to which persons think that the information is applicable to themselves (cf. Dijksterhuis et al., 2001; Pinquart, 2002), or (c) a focus on similarities or dissimilarities between priming stimuli in the priming procedure (Haddock, Macrae, & Fleck, 2002).

In sum, this study provides some evidence that self-perceptions of aging can be manipulated through age stereotypes. Given the widely shared negative image of old age, the exposure to such mainly negative stereotypes can have direct negative effects on individuals’ self-views. Thus, a more balanced public representation of aging is needed to potentially extenuate the generally positive bias towards youth and the negative bias towards old age.

Supplementary Material
Supplementary material can be found at: http://psychsocgerontology.oxfordjournals.org/

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