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Greater Perceived Similarity between Self and Own-Age Others in Older than Young Adults

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Abstract

As people age, they increasingly incorporate age-stereotypes into their self-view. Based on this evidence we propose that older compared to young adults identify to a greater extent with their own-age group on personality traits, an effect that may be particularly pronounced for positive traits. Two studies tested these hypotheses by examining associations in young and older adults between evaluations of self and own-age others on personality traits that varied on valence. In both studies, young and older participants rated personality trait adjectives on age typicality, valence, and self typicality. Converging results across both studies showed that older compared to young participants were more likely to endorse personality traits as self-typical when those traits were also perceived as more typical for their own-age group, independent of whether age was made salient to participants prior to evaluation. In addition, there was evidence that the association between evaluations of self and own-age others in older participants was greater for more positive personality traits. This age-differential pattern is discussed in the context of increased age salience in aging and its effect on the similarity between evaluations of self and own-age others in older compared to young adults.

Keywords

Aging; Stereotype; Own-Age; Age Salience; Personality Evaluation

Evaluations of Self and Others

Older adults are more susceptible than young adults to age-stereotypical information (Levy 2003). For example, implicitly primed age-stereotypes (both positive and negative) affected older but not young adults' memory recall (Hess, Hinson, & Statham, 2004; Levy, 1996,

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O'Brien & Hummert, 2006). Also, older compared to young adults perceived themselves to be more at risk for acquiring certain medical conditions, if these medical conditions were age-related (e.g., Alzheimer's disease) rather than non-age-related (e.g., AIDS; Madey & Gomez, 2003). These findings suggest that, as people age, they may increasingly incorporate age-stereotypical views into their self-view (Colton, Leshikar, & Gutchess, 2013; Levy, 2003, 2009). This may result in older adults' endorsement of traits, that they perceive as more typical for old age, as more self-typical (Levy 2003; 2009). Neuroimaging evidence provides further support of a greater association between evaluations of self and own-age others in older relative to young adults: older compared to young adults showed greater activity in posterior midline structures (i.e., posterior cingulate cortex, precuneus) during self-evaluation on age-stereotypical trait adjectives (e.g., *wise*, *frail*) compared to age-non-stereotypical control adjectives (e.g., *friendly*, *irrational*; Colton et al., 2013). These posterior midline structures, in addition to anterior midline structures (i.e., medial prefrontal cortex, anterior cingulate cortex), have consistently been shown to be involved in processing of self-relevant information in both young and older adults (Ebner et al., 2011; Gutchess, Kensinger, & Schacter, 2007; Mitchell et al., 2009; Northoff & Bermpohl, 2004). Thus it is possible that older compared to young adults engage in more self-referential thinking when processing age-stereotypical relative to age-non-stereotypical information (Colton et al., 2013).

Both behavioral and neuroimaging evidence supports the idea that age may be a more salient factor to influence evaluations of self (in relation to others) in older than in young adults. Therefore, older compared to young adults may be more likely to evaluate traits that they perceive as typical for their own-age group (i.e., *own-age typicality*) as also more typical for themselves (i.e., *self typicality*). The majority of current studies used paradigms in which age salience was experimentally enhanced, such as by presenting age-stereotypical information before participants evaluated the self and others. However, self-stereotyping theory posits that age salience is enhanced as individuals grow old (Levy, 1996; 2003; 2009). Therefore, it is reasonable to expect that older compared to young adults will show greater similarity in their evaluations of self and own-age others, even when age salience is not experimentally enhanced (or "primed"). Previous studies provide some supportive evidence for this hypothesis by showing a positive association between older adults' self-ratings on personality traits and their ratings of a "typical old person" (Rothermund & Brandtstädter, 2003; see also Colton et al., 2013; Levy 1996). To avoid any experimental enhancement of age salience, participants in this previous study completed self-ratings before ratings of the "own-age other". Also, in Rothermund and Brandtstädter the youngest participant was 54 years old, and thus this study cannot speak to effects in old age.

Grühn and Smith (2008) examined differences between young and older adults in their evaluations of a large number of trait adjectives across various dimensions, including age-relevance ("*Whether a word was typical for young or older adults*") and self-relevance ("*How accurately each word describes oneself*"). They found that the correlation between self-relevance and age-relevance was numerically stronger in young than older adults[1], suggesting that the similarity between evaluations of self and own-age others was greater in young than older adults. However, the study did not directly compare age differences in the size of this correlation. This age comparison will be done in the present study to determine

whether the associations between evaluations of self and own-age others are different between young and older adults. In addition, Grühn and Smith averaged the ratings for each dimension for each adjective across all study participants within an age group. However, simply aggregating across individual ratings to determine the association between evaluations of self and own-age others may not accurately reflect their relationship at the individual level. This assumption is plausible given evidence that the complexity of age-stereotypes increases with age, possibly as a result of the accumulation of life experiences (Hummert et al., 2011; Hummert, Garstka, Shaner, & Strahm, 1994). In particular, as individuals grow from young to old age, they develop schemas of aging by integrating their own experiences with existing age-stereotypes (Heckhausen, Dixon, & Baltes, 1989; Hummert, 2011; Levy, 2009). Given the individuality of life experiences and their accumulation with age, the representation of age schemas may vary more among older than young adults. Therefore, in the present study we will use multilevel modeling, which allows consideration of individual-level variation, to examine age differences in the associations between evaluations of self and own-age others.

Effect of Trait Valence on Evaluations of Self and Others

Another relevant line of work shows evidence of a negative age-stereotype. In particular, being old is often associated with negative traits (e.g., *senile, rigid, forgetful*; Gluth et al., 2010; Hummert, 1990; Hummert, Garstka, O'Brien, Greenwald, & Mellott, 2002). This generally negative perspective of old age combined with older adults' stronger perceived similarity between their own personality traits and the traits of other older people could put older adults at a particular risk for a negative self-view.

Individuals generally are motivated to maintain a positive self-view (Alicke & Sedikides, 2009). Further, there is evidence that maintaining a positive self-view in aging is beneficial for a successful transition into old age and contributes to successful aging (Baltes & Baltes, 1990; Brandtstädter & Greve, 1994; Levy, Slade, & Kasl, 2002). There is longitudinal evidence showing that negative perceptions of aging can result in a decline in cognitive functions (Robertson, King-Kallimanis, & Kenny, 2016), psychological well-being (Coleman, Aubin, Robinson, Ivani-Chalian, & Briggs, 1993), and physical health (Levy et al., 2002) over time in older adults. Thus, determining conditions under which older adults identify with their own-age group but still manage to maintain a positive self-concept is particularly relevant. It is, for example, possible that older adults identify themselves with positive rather than negative age-stereotypical information. Supporting this idea is evidence that older adults were more likely to distance themselves from their own-age group when their own-age group was depicted as negative (Heckhausen & Krüger, 1993; Heidrich & Ryff, 1993; Pinquart, 2002). In one study, for example older adults were asked to indicate the perceived age similarity between themselves and an unfamiliar person of their own (i.e., older adult) or another (i.e., middle-aged adult) age group. This was done after exposure to

[1]Grühn and Smith (2008) reported a negative correlation between self-relevance ratings and age-relevance ratings in young adults ($r = -.26$) while this correlation was positive in older adults ($r = .16$). That is, young adults saw trait adjectives that were rated as more typical for older adults and less typical for young adults as less typical for themselves. In contrast, older adults saw trait adjectives that were rated as more typical for older adults and less typical for young adults as more typical for themselves. Therefore, both young and older adults endorsed personality traits as self-typical when those traits were also perceived as more typical for their own-age group.

either positive (e.g., *the increment of wisdom in old age*) or negative (e.g., *the prevalence of dementia in old age*) age-related information or after receiving age-unrelated, neutral information (e.g., *the proportion of drinking water to global water resource*; Weiss & Freund, 2012). Older adults in the negative compared to the positive and the neutral condition perceived the self as more similar to the middle-aged target, while more dissimilar from their own-age (the older) target. Using a similar protocol, Weiss and Lang (2012) showed that older adults who were exposed to negative age-stereotypes identified less with people of their own-age group and reported feeling subjectively younger than older adults who were exposed to positive or neutral age-related information. These findings provide initial evidence that older adults tend to distance themselves from their own-age group when their own-age group is associated with negative age-related information. Thus, it is reasonable to expect that older adults would be more likely to identify with their own-age group on personality traits that are positive in comparison to those that are negative.

The Present Study

Based on previous findings, the present research examined the following aims across two independent studies.

Aim 1

Examination of adult age differences in the association between evaluations of self and own-age others on personality traits. We hypothesized a stronger positive association between evaluations of self (i.e., self-typicality ratings) and own-age others (i.e., own-age typicality ratings) in older than young participants (*Hypothesis 1*).

Aim 2

Examination of the extent to which the valence of personality traits moderates the association between evaluations of self and own-age others in young and older adults. We expected a stronger positive association between evaluations of self and own-age others for more positive personality traits in older relative to young participants (*Hypothesis 2)*.

While Study 1 experimentally enhanced age salience (i.e., age typicality ratings preceded self-typicality ratings), in Study 2 age salience was not experimentally enhanced (i.e., age typicality ratings were presented after self-typicality ratings). However, as laid out above, age salience enhances with age. Therefore we expected the hypothesized age differences to be supported in both studies.

Study 1

Methods

Participants—Twenty-seven young (17 women; 20 White, 4 Asian, 3 African American; age range = 18–27 years, $M = 21.07$ years, $SD = 2.40$) and 23 older (11 women; 23 White; age range 61–86 years, $M = 72.91$ years, $SD = 7.31$) participants were recruited through flyers posted on campus and in the community. Young participants were undergraduate and

graduate students from varying disciplines. Older participants reported a mean of 17.2 years of education (*SD* = *2.59*). All participants were native English speakers.

Older participants reported higher emotional well-being than young participants (M_{young}= 2.19 [*SD* = 0.88] M_{older} = 1.70 [*SD* = 0.77], $F(1, 48) = 4.34$, $p = .04$). The age groups did not differ in their self-reported general health and physical well-being (M_{young} = 2.19 [*SD* = 1.00]; M_{older} = 1.78 [*SD* = 0.95], $F(1, 48) = 2.10$, $p = .15$)[2]. They also did not differ in the vocabulary test of the Wechsler Adult Intelligence Scale (WAIS) (Wechsler, 1981; M_{young} = 22.63 [*SD* = 3.61]; M_{older} = 21.61 [*SD* = 5.75], $F(1, 48) = .58$, $p = .45$). All older participants included in Study 1 scored higher than 24 on the Mini–Mental State Examination (MMSE; Folstein et al., 1975; *M* = 28.39, *SD* = 1.56; *Max* = 30).

Trait Adjective Rating Task—In this task, participants were asked to rate each of 223 trait adjectives (see description below) on four dimensions (see Figure 1A). For *Age Typicality*, participants rated the extent to which a trait adjective better described the average young (*"between the ages of 18 and 30 years"*) or the average older ("*over the age of 60 years*"; 1 = *very typical YOUNG*, 6 = *very typical OLDER*) target person. For *Self Typicality*, participants rated how well each trait adjective described themselves (1= *not at all typical ME*, 6 = *very typical ME*). For *Young-Age Positivity* and *Older-Age Positivity*, participants rated how positive each trait adjective was when applied to the average young and average older target person, respectively (1 = *not at all positive YOUNG/OLDER,* 6 = *very positive YOUNG/OLDER). Age Typicality* was always presented first, *Self Typicality* second, followed by *Young-Age Positivity* or *Older-Age Positivity* (counterbalanced). All 223 adjectives were evaluated on one rating dimension before proceeding to the next. Participants were asked to give ratings via keyboard button presses. Responses and response times were recorded.

Stimuli—The stimulus set comprised 223 trait adjectives taken from the Age Group Evaluation and Description Inventory (AGED Inventory; Knox, Gekoski, & Kelly, 1995), the Aging Semantic Differential (ASD; Rosencranz & McNevin, 1969), and Heckhausen et al. (1989). Figure 1A presents sample adjectives. Using E-Prime 2.0, stimuli, one at a time, were presented on the computer screen in a randomized order and advanced at the push of a response key.

Procedure—After informed consent, participants received verbal and written instructions and worked on practice trials of the *Trait Adjective Rating Task* before they completed the task. Next, participants provided demographic information and responded to single items about their general emotional well-being and their general health and physical well-being, respectively. They then completed the WAIS vocabulary test. Older participants also completed the MMSE. All participants were compensated for study completion. The Human Subject Committee at Yale University approved the protocol.

[2]Emotional well-being was measured by the following item: "In general (i.e., over the past year), how would you rate your emotional well-being?"; on a scale ranging from 1 = *Nearly always upbeat and happy* to 5 = *Depressed*. General health and physical well-being was measured by the following item: "In general (i.e., over the past year), how would you rate your health and physical well-being?"; on a scale ranging from 1 = *Excellent* to 5 = *Poor*.

Analyses—Age Typicality ratings were coded so that higher scores reflected greater Own-Age Typicality in both age groups (1 = *very typical for other-age others*, 6 = *very typical for own-age others*). Own-Age Positivity was computed based on ratings on the Young-Age Positivity dimension for young participants and based on ratings on the Older-Age Positivity dimension for older participants (1 = *not at all positive to own-age others*, 6 = *very positive to own-age others*).

Given the ordinal outcome variable Self Typicality, we used multilevel ordered categorical regression (Hox, 2010) to model the data (Table 2). Own-Age Typicality and Own-Age Positivity dimensions were centered for each participant (i.e., centered within context; Zhang, Zyphur, & Preacher, 2009). We considered both the fixed and random effects of Own-Age Typicality and Own-Age Positivity in the model. The fixed effect of Own-Age Typicality on Self Typicality assessed the extent to which the perception of a personality trait as self-typical depended on the extent to which the trait was perceived as typical (i.e., representative) for an own-age target. Similarly, the fixed effect of Own-Age Positivity on Self Typicality assessed the extent to which the perception of a personality trait as self-typical depended on the extent to which the trait was perceived as positive for an own-age target. In addition to the main effects, we also considered the fixed interaction of Own-Age Typicality and Own-Age Positivity in the model. This allowed us to examine whether the association between Own-Age Typicality and Self Typicality varied depending on the extent to which the trait was perceived as positive for an own-age target. Participant Age was entered as an additional predictor at the between-person level. The interactions between Participant Age and the three fixed effects (i.e., Own-Age Typicality, Own-Age Positivity, and their interaction) were also estimated in the model to determine how those effects differed between young and older participants.

Results

Table 1 presents the overall descriptive statistics of Self Typicality, Own-Age Typicality, and Own-Age Positivity ratings for the 223 personality trait adjectives in young and older participants.

As shown in Table 2, the fixed effect of Own-Age Typicality on Self Typicality was significant ($B = .14$, $z = 4.32$, $p < .001$). This effect was further qualified by its interaction with Participant Age ($B = .15$, $z = 2.18$, $p = .03$, Figure 2). Supporting *Hypothesis 1*, older participants were more likely to describe a personality trait as more self-typical when they perceived that trait to be representative of an own-age target ($B = .23$, $z = 4.27$, $p < .001$). This effect was not significant in young participants ($B = .07$, $z = 1.88$, $p = .06$).

The interaction of Own-Age Typicality and Own-Age Positivity on Self Typicality was not significant ($B = -.02$, $z = -1.95$, $p = .052$). Further, this interaction was not qualified by a significant three-way interaction with Participant Age ($B = .02$, $z = 0.68$, $p = .49$). Contrary to *Hypothesis 2*, the effect of Own-Age Typicality on Self Typicality was not moderated by the valence of the trait adjectives in older adults.

As shown in Table 2, we also observed a significant fixed effect of Own-Age Positivity on Self Typicality ($B = .83$, z = 13.25, $p < .001$). This effect was further qualified by a

significant interaction with Participant Age (B = .26, z = 2.63, p = .008). In particular, both young (B = .72, z = 9.33, p < .001) and particularly older (B = .96, z = 8.52, p < .001) participants were more likely to perceive a personality trait as more self-typical the more positive they perceived that trait to be for their own-age group.

Summary

Supporting *Hypothesis 1*, older participants rated traits that were more typical for their own-age group as more self-typical. This effect was not observed in young participants. Thus, older compared to young participants were more likely to identify with traits that they perceived as typical for their own-age peers. These findings expand previous evidence (Rothermund & Brandtstädter, 2003) by showing that the similarity between evaluations of self and own-age others was greater in older than young adults. However, inconsistent with *Hypothesis 2*, there was no moderation effect of the Own-Age Positivity of traits on the association between Self Typicality and Own-Age Typicality in older adults. That is, older adults' identification with their own-age group on personality traits was not influenced by the perceived positivity of these traits for their own-age group.

Previous theoretical and empirical work suggests that, as individuals grow older, age may become a more salient construct to influence their evaluations of self (Colton et al., 2013; Levy, 2003, 2009). In line with this suggestion, Study 1 found that evaluations of self were associated with evaluations of own-age others for older but not for young adults. There is evidence to suggest that presenting age-stereotypical information is more likely to influence older than young adults' subsequent thought and behavior (Hess et al., 2004; Levy 1996; Stein, Blanchard-Fields, & Hertzog, 2002). For example, completing a scrambled sentence task that contained age-stereotypical information affected memory performance in older but not young adults on a follow-up word list recall task (Hess et al., 2004). Similar to previous studies, participants in our Study 1 were first asked to indicate the age typicality of the trait adjectives, followed by self typicality. Thus, it is possible that the greater similarity between evaluations of self and own-age others observed in older but not young participants in Study 1 was an effect of presenting the age typicality rating before the self typicality rating. That is, the design of Study 1 may have induced a heightened age salience "priming effect" by presenting age-stereotypical information up front. However, according to Levy's self-stereotyping theory (Levy, 2003; 2009), age salience is enhanced by the personal experience of individuals as they grow old. Thus, it is reasonable to believe that the association between evaluations of self and own-age others in older adults remains even when age salience is not experimentally primed.

To examine this further, in Study 2 the age typicality rating was completed after the self-typicality rating. We expected that older compared to young adults would still show greater similarity in their evaluations of self and own-age others even though age salience was not experimentally enhanced.

Hypothesis 2, that older relative to young adults would show a stronger similarity between evaluations of self and own-age others for more positive personality traits, was not supported in Study 1. Rather, we found that the valence of trait adjectives did not influence older adults' identification with their own-age group. The valence of the trait adjectives in Study 1

was taken from ratings of own-age positivity. That is, this measure reflected the positivity of traits for a specific age group. It is possible that the perception of the valence of specific personality traits differs as a function of their age typicality. For example, orientation toward positive outcomes and growth is perceived as more typical and positive in young age, whereas motivation toward maintenance and loss-prevention is perceived as more typical and positive in old age (Ebner, Riediger, & Lindenberger, 2009). Hence the trait adjective *ambitious* may be rated as more positive for young than older individuals, whereas the trait adjective *satisfied* may be rated as more positive for older than young individuals. In addition, ratings of own-age positivity may not be independent from ratings of age typicality of traits but may instead be influenced by an individual's representation of a specific age group. For example, if individuals hold a positive view of their own-age group, they may be more likely to give more positive (or less negative) ratings to traits that are typical for their own-age group. Post-hoc analyses in Study 1 supported this idea, in that the effect of Own-Age Positivity on Own-Age Typicality was significant ($B = .22$, $z = 4.63$, $p < .001$), suggesting that trait adjectives that were rated as more positive for the own-age group were also perceived as more typical for the own-age group. Taking these considerations and post-hoc findings into account, own-age positivity ratings of traits may not have accurately reflected the valence of those traits in general. Thus, in Study 2, general and not age-specific valence ratings were obtained.

Study 2

Methods

Participants—Fifty young (25 women; 43 White, 4 Asian, 2 African American, 1 American Indian or Alaska Native; age range = 18–22 years, $M = 18.81$ years, $SD = .98$) and 51 older (26 women; 50 White, 1 African American; age range 60–92 years, $M = 73.76$years, $SD = 7.70$) participants were recruited for a larger project. Young participants were undergraduate students from the University of Florida and received class credit for study participation. Older participants were from the community and were financially reimbursed for study participation. Young participants reported a mean of 12.9 years of education ($SD = 1.13$) and older participants a mean of 15.2 years ($SD = 5.80$). All participants reported good health condition and were native English speakers. Inclusion criteria for older participants was a score of 30 or above on the Telephone Interview for Cognitive Status (TICS; Brandt, Spencer, & Folstein, 1988; $M = 35.41$, $SD = 2.78$; $Max = 42$).

Older participants reported higher positive mood ($M_{young} = 2.91$ [$SD = 0.77$] $M_{older} = 3.49$ [$SD = 0.69$], $F(1, 99) = 15.73$, $p < .001$) and less negative mood ($M_{young} = 1.33$ [$SD = 0.45$] $M_{older} = 1.14$ [$SD = 0.21$], $F(1, 99) = 6.82$, $p = .01$) than young participants. Also, older participants reported more positive attitude toward age than young participants ($M_{young} = 4.66$ [$SD = 0.39$] $M_{older} = 4.50$ [$SD = 0.37$], $F(1, 99) = 4.31$, $p = .04$) [3]. The age groups did

[3]Positive and negative mood were measured by the Positive Affect and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988); on a scale ranging from 1 = *Very slightly or not at all* to 5 = *Extremely*. Higher score indicated more positive and more negative mood, respectively. Attitude toward age was measured by the Reactions to Ageing Questionnaire (Gething, 1994) on a scale ranging from 1 = *Disagree very much* to 5 = *Agree very much*. Higher scores indicated greater ageism.

not differ on the Benton Controlled Word Association Test (Ruff, Light, Parker, & Levin, 1996; M_{young} = 41.74 [SD = 11.02]; M_{older} = 41.24 [SD = 13.49], F(1, 97) = .04, p = .84), while young compared to older participants showed better performance on the Method of Loci Task (Brehmer, Li, Müller, von Oertzen, & Lindenberger, 2007; M_{young} = 8.70 [SD = 3.73]; M_{older} = 3.51 [SD = 3.11], F(1, 99) = 57.88, p < .001) and the WAIS-R Digital-Symbol Substitution Test (Wechsler, 1981; M_{young} = 61.52 [SD = 9.17]; M_{older} = 42.29 [SD = 9.09], F(1, 97) = 109.67, p < .001).

Trait Adjective Rating Task—In this task, participants were asked to rate each of 224 trait adjectives on the following three dimensions on 7-point Likert scales (see Figure 1B): (a) *Age Typicality* (*How typical for young versus older adults?* 1 = *young*, 4 = *neither,* 7 = *old*); (b) *Self Typicality* (*How typical for yourself?* 1 = *not me*, 4 = *somewhat me,* 7 = *me*), and (c) *Valence* (*How positive or negative?* 1 = *negative*, 4 = *neutral*, 7 = *positive*). The order of presenting Self Typicality or Valence first was counterbalanced across participants. Age Typicality was always presented last. All adjectives were evaluated on a rating dimension before proceeding to the next dimension. As shown in Figure 1B, each adjective was presented on the computer screen for 5 seconds and was followed by a fixation cross. Participants were asked to give ratings via keyboard button presses. Responses and response times were recorded.

Stimuli—Study 2 used a subset of the 132 trait adjectives from Study 1. In addition, 92 new trait adjectives were taken from Grühn, Gilet, Studer, and Labouvie-Vief (2011), for a total of 224 trait adjectives in Study 2. Stimuli were presented in SR Research Experiment Builder 1.10.165 (SR Research, Mississauga, Canada).

Procedure—A phone screening determined study eligibility. Upon arrival for the study visit, participants provided informed written consent, followed by completing the Positive Affect and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) to measure current mood. They then completed the first rating dimension (either Self Typicality or Valence, depending on the counterbalance scheme) of the *Trait Adjective Rating Task*. After completion of several cognitive and social-cognitive measures reported elsewhere (Lin, Lendry, & Ebner, 2016), participants completed the remaining two dimensions (either Self Typicality or Valence, depending on the counterbalance scheme, followed by Own-Age Typicality). At the end of the study, participants were debriefed and compensated. The Institutional Review Board at University of Florida approved the study.

Analyses—As in Study 1, Age Typicality ratings were coded so that higher scores reflected greater Own-Age Typicality for young and older participants, respectively (1 = *other age*, 4 = *neither,* 7 = *own age*). The model used in this study was identical to the model used in Study 1 with the exception that the variable Own-Age Positivity was replaced by the variable Valence.

Results

Table 1 presents the overall descriptive statistics of Self Typicality, Own-Age Typicality, and Valence ratings for the 224 personality trait adjectives in young and older participants.

As shown in Table 3, the fixed effect of Own-Age Typicality on Self Typicality was significant ($B = .11$, z = 4.13, $p < .001$). This effect was qualified by its interaction with Participant Age ($B = .16$, z = 3.21, $p = .001$). Supporting *Hypothesis 1*, older participants were more likely to describe a personality trait as more self-typical the more typical they perceived that trait to be for an own-age target ($B = .20$, $z = 4.20$, $p < .001$). In contrast, this effect was not significant in young participants ($B = .03$, $z = 1.06$, $p = .29$).

The interaction between Own-Age Typicality and Valence on Self Typicality was not significant ($B = .002$, $z = .50$, $p = .62$). However, the three-way interaction between Own-Age Typicality, Valence, and Participant Age was significant ($B = .02$, $z = 2.61$, $p = .01$, Figure 3). While the interaction of Own-Age Typicality and Valence was significant in older participants ($B = .02$, $z = 2.40$, $p = .02$) it was not significant in young participants and the effect was in opposite directions for the two age groups ($B = -.01$, $z = -1.69$, $p = .09$). Thus, supporting *Hypothesis 2*, the effect of Own-Age Typicality on Self Typicality was stronger for more positive traits in older (but not young) participants.

Also consistent with results from Study 1, the fixed effect of Valence on Self Typicality was significant ($B = .94$, z = 22.80, $p < .001$). This effect was further qualified by a significant interaction with Participant Age ($B = .26$, z = 3.77, $p < .001$). Both young ($B = .79$, $z = 12.97$, $p < .001$) but particularly older ($B = 1.09$, $z = 19.67$, $p < .001$) participants were more likely to perceive personality traits as more self-typical the more positive they perceived a trait to be.

Summary

Replicating the general pattern of findings in Study 1 and in further support of *Hypothesis 1*, there was a positive association between Self Typicality and Own-Age Typicality in older but not young participants in Study 2. Thus, compared to young adults, older adults showed greater identification with their own-age group on personality traits. Expanding findings from Study 1, Study 2 findings showed that this age-differential pattern could not be explained by an effect of increased age salience due to presenting the Age Typicality rating dimension first, since in Study 2, Age Typicality was rated last.

In addition, *Hypothesis 2* was supported. In particular, the association between Self Typicality and Own-Age Typicality in older participants was stronger for more positive personality traits. This finding suggests that, while older adults identified with their own-age group on positive traits, their identification with their own-age group was reduced on negative traits. This finding is consistent with previous evidence which showed that older adults when exposed to negative age-stereotypes identified less with their own-age group (Pinquart, 2002; Weiss & Freund, 2012; Weiss, & Lang, 2012). That is, older adults appear to distance themselves from their own-age group when they view their own-age group as negative. Importantly, post-hoc analyses showed that the effect of Valence on Own-Age Typicality was not significant in Study 2 ($B = .03$, $z = 1.52$, $p = .13$). Unlike in Study 1, where Own-Age Positivity and Own-Age Typicality ratings were positively correlated, Valence and Own-Age Typicality ratings were not related in Study 2. The different pattern of findings across Study 1 and 2 highlights the importance of differentiating age-specific

valence (as assessed in Study 1) from general valence (as assessed in Study 2) in their effect on perceived similarity between the self and own-age others.

General Discussion

Two independent studies tested age differences in the association between evaluations of self and own-age others. We found that older (but not young) participants had a positive association between evaluations of self and own-age others on personality traits. In addition, Study 2 showed that older adults' identification with their own-age group depended on the valence of the to-be-evaluated personality traits. In particular, older adults identified more with their own-age group on positive than negative traits. These novel findings are discussed in more detail next.

Age Constitutes a Salient Factor for Older but not Young Adults' Evaluations of Self

Our findings across the two studies suggest that older compared to young adults may be more likely to identify with their own-age group; that is, they hold more similar perceptions of themselves and their own-age peers. In particular, across both studies, higher own-age typicality ratings on specific traits predicted higher self-typicality ratings on those traits for older (but not young) adults. This finding is consistent with previous evidence that older adults rated their own personality profile as similar to a "typical old person" (Rothermund & Brandtstädter, 2003). Presenting age-relevant information can affect older adults' behavior and performance (i.e., stereotype-threat effect; Hummert, 2011; Meisner, 2012; Weiss & Freund, 2012; Weiss & Lang & 2012). Accordingly, Study 1 showed a stronger perceived similarity between evaluations of self and own-age others in older than young adults. In this study, all participants responded to the age typicality ratings before they responded to the self-typicality ratings. To exclude the possibility that this effect was due to enhanced age salience from our experimental manipulation (i.e., as a result of the presentation order of rating dimensions), in Study 2, the own-age typicality rating dimension was presented after the self-typicality rating dimension. That is, age salience was not "primed". In line with Study 1, Study 2 also found a positive association between self typicality and own-age typicality in older but not young adults. Therefore, our findings are in line with self-stereotyping theory (Levy 2003; 2009) that suggests enhanced age salience occurs as individuals grow older. This may render age-related information generally more self-relevant in older than young adults, thus explaining our consistent pattern of findings across our experimental age salience manipulation.

In contrast to our findings in older adults, across the two studies there was no association between self-typicality ratings and own-age typicality ratings in young participants. Thus, young adults' evaluations of self were not influenced by their evaluations of own-age others, possibly suggesting that age is not a salient factor when young adults evaluate themselves (in comparison to others). This finding contradicts findings from Grühn and Smith (2008) who reported a significant correlation between self-typicality ratings and age-typicality ratings in young adults. While our study statistically controlled the effect of valence on self typicality (i.e., our models treated own-age typicality and valence as independent variables), Grühn and Smith did not control valence, even though their correlation between valence and age

typicality was significant in young adults, and thus valence may have largely driven the effect.

Older Adults' Identification with their Own-Age Group Is Pronounced for More Positive Traits

Previous studies suggest that both young and older adults have a positive self-view (Alicke, 1985; Alicke & Sedikides, 2009; Zell & Alicke, 2011). Consistent with these findings, in our study, both age groups, but particularly older participants, were more likely to rate traits that they perceived as more positive as also more self-typical. This *self-positivity effect* may reflect a self-enhancement strategy, in which individuals attribute more favorable evaluation to themselves (Ochsner et al., 2005). This mechanism is important for maintaining one's self-esteem (Suls, Lemos, & Stewart, 2002) and well-being (Taylor & Brown, 1988).

In addition, we found evidence that the valence of personality traits did not only directly influence self-typicality ratings, but it also influenced the similarity between evaluations of self and own-age others. In particular, older participants showed less similarity between evaluations of self and own-age others the more negative the trait adjectives. This is in line with previous evidence showing that older adults were less likely to identify with their own-age group when their own-age group was perceived as negative (Pinquart, 2002; Weiss & Freund, 2012; Weiss & Lang, 2012). While older adults generally endorse for themselves those traits that are typical for their own-age group, this own-age identification in older adults appears to be reduced for negative traits. This distancing of older adults from their own-age group on negative aspects of personality may constitute another self-protective strategy through which older adults maintain a positive self-view despite being surrounded by negative age-stereotypes (Weiss & Lang, 2012). Previous studies have shown that older adults may distance themselves from their own-age group when negative age-stereotypes are made salient to them (Weiss & Freund, 2012; Weiss & Lang, 2012), possibly as a passive reaction to exposure to information that is threatening to their positive self-view. In the present research, negative information about old age was based on older adults' subjective evaluation of personality traits. Thus, older adults' distancing from these negative aspects of old age in the present study may not have been a passive reaction to the negative information presented to them. Rather, in a self-serving manner, it may have constituted a proactive adjustment of their self-view in light of their own-age group evaluation.

Limitation

One methodological limitation of the present study is the relatively broad definition of "old age" that participants were presented with. In particular, "old age" was defined as "*over the age of 60 years*" in Study 1 and no explicit definition of "old age" was given in Study 2. The literature distinguishes between "young-old" (e.g., 60–79 years old) and old-old (e.g., 80+ years old) and attests to significant health and cognitive differences between these age categories (Baltes & Smith, 2003; Higgs & Gilleard, 2013). For example, the Berlin Aging Study suggests that young-old age was characterized by comparable physical, mental, and socioemotional functioning to middle age, thus depicting old age in quite positive terms. In contrast, old-old age was characterized by limited functioning across various domains, thus

depicting old age in quite negative terms (Baltes & Mayer, 1999; see also Hummert 1990). Similarly, Grühn et al. (2011) showed that the young-old age category (60–69 years) was perceived as most positive, while the oldest-old age category (70+ years) and adolescence (10–19 years) were perceived as most negative. Thus, it is plausible that young-old compared to old-old adults are more likely to endorse personality traits that are typical for their own-age group; or that young-old adults are more likely to endorse in their self-view young-old typical as compared to old-age typical characteristics. These possibilities will have to be examined in future extensions of this work.

Conclusion

Across two independent studies, the present research compared associations between evaluations of self and others on personality traits between young and older adults. Our findings qualify previous work in showing that there is an association between evaluations of self and own-age others in older but not in young adults. Further, our results suggest that enhanced age salience in aging may contribute to greater perceived similarity between oneself and one's own-age group in older than young adults. In addition, older adults' identification with their own-age group was reduced for negative personality traits. This distancing from negative characteristics associated with old age may reflect a protective mechanism in older adults for maintaining a positive self-view. Future research is needed to study the processes of identification with and distancing from own-age peers and their effect on health and well-being in old age.

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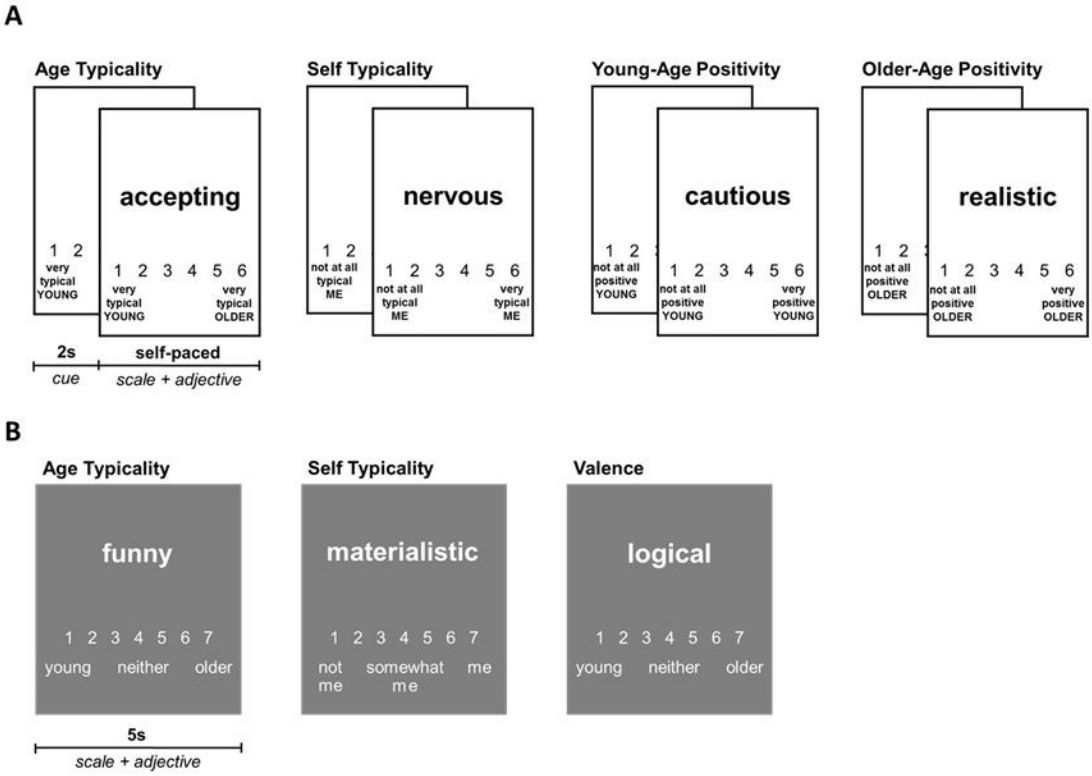

Figure 1.

Trial event timing and sample stimuli used in the *Trait Adjective Rating Task* in (A) Study 1 and (B) Study 2.

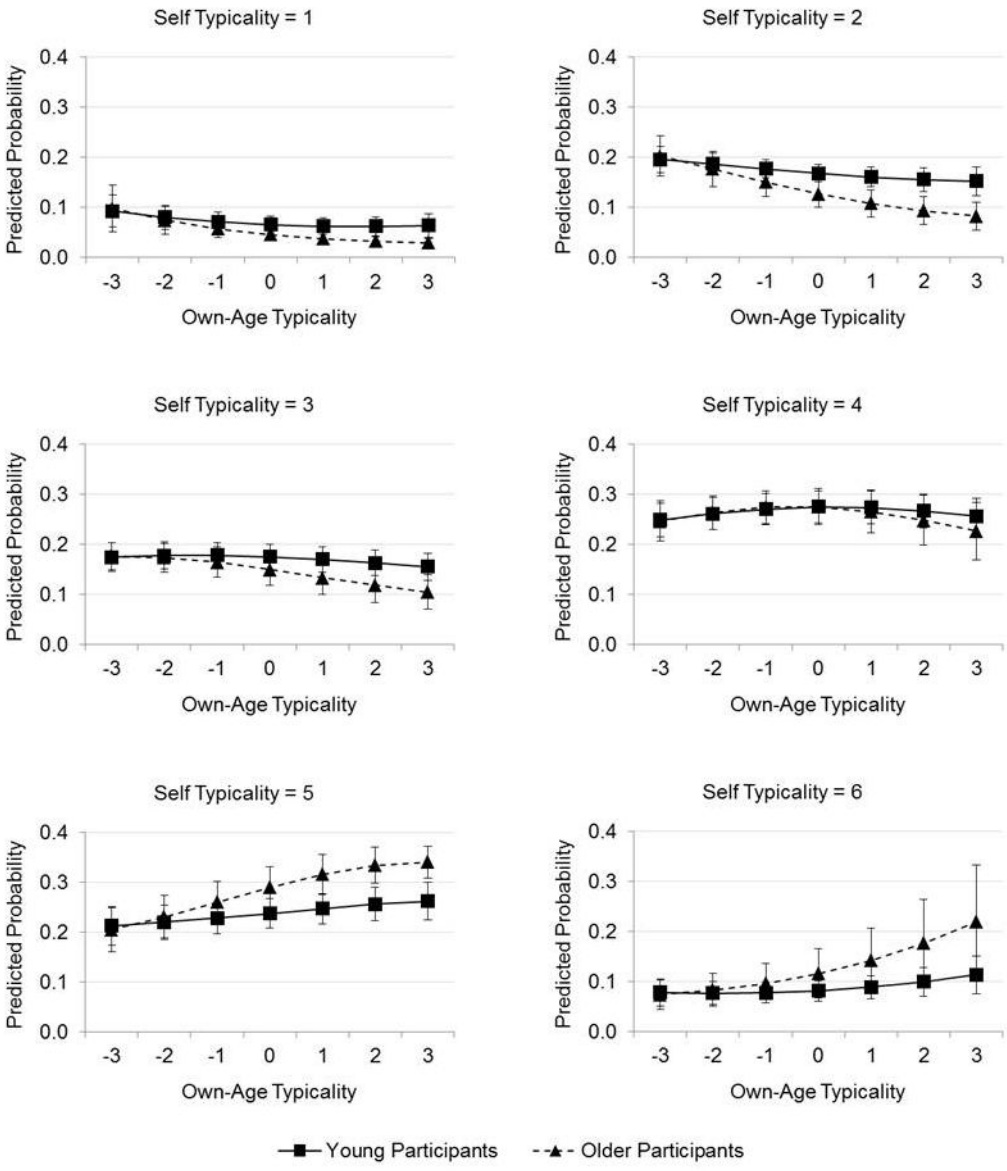

Figure 2.

Study 1: Predicted probabilities for levels of Self Typicality as a function of Own-Age Typicality and Participant Age. Predictions consider fixed but not random effects. Error bars represent 95% confidence interval.

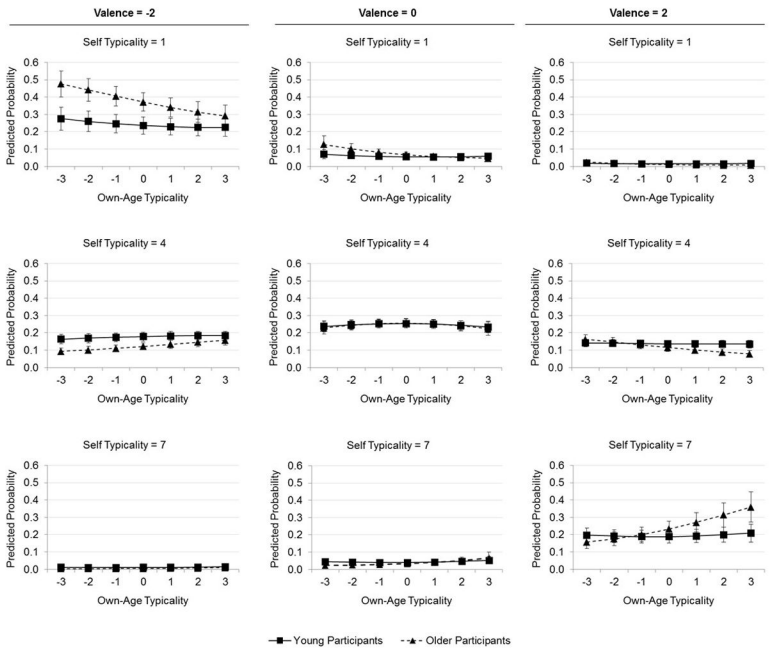

Figure 3.

Study 2: Predicted probabilities for levels of Self Typicality as a function of Own-Age Typicality, Valence, and Participant Age. Predictions consider fixed but not random effects. Error bars represent 95% confidence interval.

Table 1

Descriptive Statistics (Mean (Standard Deviation)) for all Study 1 and Study 2 Personality Trait Adjectives in Young and Older Participants.

	Young Participants	Older Participants
Study 1		
Self Typicality	3.68 (1.57)	3.88 (1.72)
Own-Age Typicality	3.37 (1.57)	3.85 (1.57)
Own-Age Positivity	3.72 (1.69)	3.85 (1.70)
Study 2		
Self Typicality	4.12 (1,91)	3.96 (2.06)
Own-Age Typicality	4.03 (1.85)	4.21 (1.66)
Valence	4.27 (2.10)	4.19 (2.07)

Note. Rating dimensions in Study 1: Self Typicality (1= *not at all typical ME*, 6 = *very typical ME*), Own-Age Typicality (1 = *very typical for other-age others*, 6 = *very typical for own-age others*), and Own-Age Positivity (1 = *not at all positive to own-age others*, 6 = *very positive to own-age others*). Rating dimensions in Study 2: Self Typicality (1 = *not me*, 4 = *somewhat me*, 7 = *me*), Own-Age Typicality (1 = *very typical for other-age target*, 6 = *very typical for own-age target*), and Valence (1 = *negative*, 4 = *neutral*, 7 = *positive*).

Table 2

Study 1: Results of Multilevel Ordered Categorical Regression (B/σ^2 (SE), Standard Error [SE], and 95% Confidence Interval [CI])

	Self Typicality					
	Total		Young Participants		Older Participants	
Fixed Effects	*B (SE)*	*95% CI*	*B (SE)*	*95% CI*	*B (SE)*	*95% CI*
Participant Age	**.40 (*.17*)**	(.07, .73)	--		--	
Own-Age Typicality	**.14 (*.03*)**	(.08, .21)	.07 (*.04*)	(−.003, .15)	**.23 (*.05*)**	(.12, .33)
Participant Age × Own-Age Typicality	**.15 (*.07*)**	(.02, .29)	--		--	
Own-Age Positivity	**.83 (*.06*)**	(.71, .96)	**.72 (*.08*)**	(.57, .87)	**.96 (*.11*)**	(.74, 1.18)
Participant Age × Own-Age Positivity	**.26 (*.10*)**	(.07, .46)	--		--	
Own-Age Typicality × Own-Age Positivity	−.02 (*.01*)	(−.04, .0002)	**−.03 (.01)**	(−.05, −.006)	−.01(.02)	(−.05, .03)
Participant Age × Own-Age Typicality × Own-Age Positivity	.02 (*.02*)	(−.03, .06)	--		--	
Random Effects	σ^2 *(SE)*		σ^2 *(SE)*		s^2 *(SE)*	
Intercept	**.29 (*.09*)**	(.16, .53)	**.09 (*.03*)**	(.05, .18)	**.55 (*.19*)**	(.27, 1.12)
Own-Age Typicality	**.05 (*.02*)**	(.02, .11)	**.03 (*.01*)**	(.02, .06)	**.07 (*.04*)**	(.02, .21)
Own-Age Positivity	**.11 (*.02*)**	(.08, .15)	**.12 (*.03*)**	(.08, .18)	**.09 (*.03*)**	(.06, .16)
N (Observations)	11146		6021		5125	
N (Participants)	50		27		23	

Notes. Dependent variable: Self Typicality (1 = *not at all typical ME*; 6 = *very typical ME*). Independent variables: Own-Age Typicality and Own-Age Positivity (centered in the context of participants), and Participant Age. **Bold print** indicates significant effects at $p < .05$.

Table 3

Study 2: Results of Multilevel Ordered Categorical Regression (B/σ^2 (SE), Standard Error [SE], and 95% Confidence Interval [CI])

	Self Typicality					
	Total		Young Participants		Older Participants	
Fixed Effects	*B (SE)*	*95% CI*	*B (SE)*	*95% CI*	*B (SE)*	*95% CI*
Participant Age	**−.22 (*.11*)**	(−.43, −.02)			--	
Own-Age Typicality	**.11 (*.03*)**	(.06, .17)	.03 (*.03*)	(−.02, .08)	**.20 (*.05*)**	(.11, .30)
Participant Age × Own-Age Typicality	**.16 (*.05*)**	(.06, .25)				
Valence	**.94 (*.04*)**	(.86, 1.02)	**.79 (*.06*)**	(.67, .91)	**1.09 (*.06*)**	(.98, 1.20)
Participant Age × Valence	**.26 (*.07*)**	(.12, .39)				
Own-Age Typicality × Valence	.002 (*.005*)	(−.01, .01)	−.01 (*.005*)	(−.02, .001)	**.02 (*.01*)**	(.003, .03)
Participant Age × Own-Age Typicality × Valence	**.02 (*.01*)**	(.01, .04)				
Random Effects	*σ^2 (SE)*		*σ^2 (SE)*		*σ^2 (SE)*	
Intercept	**.26 (*.04*)**	(.19, .36)	**.18 (*.04*)**	(.12, .27)	**.36 (*.08*)**	(.23, .56)
Own-Age Typicality	**.05 (*.03*)**	(.01, .18)	**.02 (*.01*)**	(.01, .06)	**.09 (*.07*)**	(.02, .46)
Valence	**.12 (*.02*)**	(.08, .17)	**.12 (*.04*)**	(.07, .22)	**.11 (*.02*)**	(.07, .16)
N (Observations)	21102		10587		10515	
N (Participants)	101		50		51	

Notes. Dependent variable: Self Typicality (1 = *not me*; 4 = *somewhat me*; 7 = *very typical me*). Independent variables: Own-Age Typicality and Valence (centered in the context of participants), and Participant Age. **Bold print** indicates significant effects at $p < .0$