Contexts of Aging: Assessing Evaluative Age Stereotypes in Different Life Domains

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Objectives. Research on age stereotypes suggests that views of older persons are complex and multidimensional. We investigated the positivity or negativity of age stereotypes with respect to different life domains.

Method. A newly developed questionnaire assessing domain-specific age stereotypes was administered to a large sample of adults covering a wide age range.

Results. Our findings confirm the existence of independent domain-specific age stereotypes, providing evidence for a multifaceted and complex view of old age and aging. "Old persons" were evaluated differently in the various life domains, and age thresholds for ascriptions of being old differed between domains. Furthermore, the positivity of domain-specific age stereotypes of a person predicted individual life satisfaction for the respective life domain. The strength of the relationship between age stereotypes and life satisfaction increased with participants' age.

Discussion. Our results indicate the existence of domain-specific age stereotypes that become internalized into older persons' self-views.

Key Words: Age stereotypes—Attitudes—Context specificity—Life domains—Well-being.

AGING is a process that is likely to happen to all of us. Everyone has ideas on how aging affects a person in different aspects of one's life, whether focused on deterioration of physical health or becoming calm and experienced. Even though recent research reviews indicate that negative age stereotypes are prevalent in the majority of the population (Kite, Stockdale, Whitley, & Johnson, 2005) and different forms of age discrimination are more or less widespread in society (Nelson, 2005; Rothermund & Mayer, 2009), studies also suggest that beliefs about age and aging are not unidimensionally negative. Positive and negative facets of the age stereotype have been demonstrated to exist even within the same person (Brewer, Dull, & Lui, 1981; Cuddy, Norton, & Fiske, 2005; Filipp & Mayer, 1999; Hummert, Garstka, Shaner, & Strahm, 1994; Kruse & Schmitt, 2006): Negative age stereotypic attributes such as frailty, dementia, dependence or rigidity, and positive attributes like wisdom, integrity, tenderness, and experience are likewise associated with old age and aging. In a now classic study, Heckhausen, Dixon, and Baltes (1989) found that even though the ratio between gains and losses over the life span shifts in the direction of losses, old age is still perceived as a period in life in which important gains can be achieved. Hummert (1990) identified several different prototypes of old persons with different attitudes and qualities, some of them negative and some positive.

More recent evidence for a multifaceted age stereotype comes from a study by Gluth, Ebner, and Schmiedek (2010). They investigated whether older and younger adults were evaluated differently with regard to four different content factors of the Aging Semantic Differential (ASD; Rosencranz & McNevin, 1969; the four factor solution was originally proposed by Holtzman, Beck, & Kerber, 1979 and later modified by Intrieri, von Eye, & Kelly, 1995). They demonstrated that whereas older adults were evaluated more negatively on the factors "instrumentality" (described by adjective pairs such as flexible–inflexible, active–passive) and "integrity" (e.g., optimistic–pessimistic, expectant–resigned), they were also rated more positively with regard to "autonomy" (e.g., independent–dependent, secure–insecure) but no differences were obtained with regard to "acceptability" (e.g. friendly–unfriendly, pleasant–unpleasant). The authors interpreted this finding as an indication that a single evaluative dimension may not be adequate to describe evaluative age stereotypes, and they advocate a multidimensional conceptualization of attitudes toward older persons

In their meta-analytic review, Kite and colleagues (2005) found a general negative bias in the perception of older adults, but their findings also attest to a large variance between studies, suggesting that perceptions of old age and older people are complex and multidimensional. To explain this variance in the evaluations of old people, Kite and colleagues proposed that views of old age and aging are heavily reliant on context variables. They argued that not age per se, but the social context a person is seen in, and the role information that is provided, determine whether attitudes toward older persons are more or less favorable. Perry and Finkelstein (1999) argued that since the perception of age is more ambiguous than the perception of race or gender

because features such as skin color or facial hair are more easily recognized than indicators of age, contextual factors may have a greater impact on the evaluation of older persons than they have on those of other demographic groups. Considering this evidence, we wanted to take a closer look at the multifacetedness of evaluations of older persons by investigating the role of different life domains or contexts.

Direct evidence supporting the existence of context-specific age stereotypes was reported recently by Casper, Rothermund, and Wentura (in press). In their study, the activation of specific age-stereotypic trait attributes was dependent on the context in which an old or young person was encountered. Significant priming effects emerged only for matching combinations of age categories, contexts, and stereotypical attributes (e.g., a picture of an old woman led to an activation of the word "slow" only in combination with the sentence "she is walking across the street" but not in combination with the sentence "she is watering the flowers"). In a similar vein, Diekman and Hirnisey (2007) demonstrated that prejudice against older persons in hiring decisions was only apparent in specific contexts in which specific attributes were made salient that contrasted with work-related stereotypes of old people (negatively biased evaluations of older workers occurred only if selections had to be made for a company that had been characterized as being "dynamic"). They concluded that "both explicit and implicit prejudice can vary, depending on the context occupied by the target" (p. 1364). Relatedly, linking domain-specific stereotypes to behavior, Levy and Leifheit-Limson (2009) found that the effect of stereotype priming on physical and cognitive performance of older adults was largest when the primed stereotype content matched the subsequent performance area.

A closer look on how age stereotypes are differentiated in specific life domains seems especially interesting if one considers how age stereotypes affect health and coping related processes for older adults. The positivity of personally held age stereotypes and views on one's own aging has been linked to better health behavior (Levy & Myers, 2004; Wurm, Tomasik, & Tesch-Römer, 2010), longevity (Levy, Slade, Kunkel, & Kasl, 2002), and cognitive abilities (Levy, 2003) and is negatively related to cardiovascular disease (Levy, Zonderman, Slade, & Ferrucci, 2009) and depression (Rothermund, 2005).

An explanation of how age stereotypes influence the self-concept and well-being of older people is provided by the internalization hypothesis (cf. Bennett & Gaines, 2010; Levy, 2009; Rothbaum, 1983; Rothermund, 2005). It states that age stereotypes held in younger years are incorporated into the self-views of older people: The stereotype about the outgroup of "old persons" turns into an autostereotype when a self-classification as old becomes unavoidable. Empirical evidence for an internalization of age stereotypes during old age was reported in a longitudinal study by Rothermund and Brandtstädter (2003). The authors found that older people with negative beliefs about old age and

aging showed a deterioration of their self-concept over an eight-year interval, whereas positive views on aging predicted improved self-ratings. Considering the aforementioned evidence, a further differentiation and description of stereotype contents and contexts may enable domain-specific predictions of behavior, performance, and well-being of older adults.

An approach that seems helpful for an understanding of contextual factors is to look at age stereotypes in various life domains. As pointed out in the studies cited above (Gluth et al., 2010; Heckhausen et al., 1989), age stereotypes in certain attribute dimensions like health status and cognitive abilities or competences are associated with losses rather than with gains, whereas theories like socioemotional selectivity theory (Carstensen & Mikels, 2005) or the wisdom concept (Scheibe, Kunzmann, & Baltes, 2009) highlight the fact that there may be other dimensions like close family relations or life experience in which older people may be seen as more positive than, or at least as positive as, younger persons. Previous studies that investigated multifaceted perceptions of age have focused on age stereotypes with regard to different, more general attribute domains (e.g., instrumentality, integrity, autonomy, attractiveness; Gluth et al., 2010; Kite et al., 2005), or they focused on a single domain (for reviews regarding age stereotypes in the work context, cf. Perry & Finkelstein, 1999; Posthuma & Campion, 2009). However, in our study, we wanted to assess age stereotypes with regard to a larger number of specific contexts of living or life domains that have been highlighted as important in the literature, including family relations, leisure time, or spirituality (e.g., Carstensen & Mikels, 2005; Tornstam, 1997).

A wide array of self-report instruments assessing age stereotypes exists. However, concerning the problem to be addressed in this study, they all have shortcomings. Polizzi's version of the ASD (Polizzi, 2003), Kogan's "Attitudes Toward Old People Scale" (Kogan, 1961), or the adjective list used by Rothermund and Brandtstädter (2003) aim at an assessment of a global age stereotype that is described by a single evaluative factor (positive–negative). Scales like the "Stereotypes Toward Older People Scale" (Chumbler, 1994), the measure used by Kite, Deaux, and Miele (1991) or the version of the ASD that was used by Gluth and colleagues (2010) propose more than one factor but do not contain a direct reference to specific contexts of living and thus may be of limited value in assessing domain-specific age stereotypes. Therefore, in order to investigate the existence and predictive validity of distinct domain-specific age stereotypes, we developed a new self-report measure to assess attitudes toward older people in specific life domains.

The measure was administered to a large sample of participants covering a wide age range. This allowed us to investigate domain-specific age stereotypes in different age groups. Based on previous findings (e.g., Casper et al., in press; Diekman & Hirnisey, 2007; Kite et al., 2005; Levy &

Leifheit-Limson, 2009), we expected to find evidence for the existence of independent domain-specific age stereotypes. As previous studies have also yielded cohort differences in the perception and evaluation of older people (Gluth et al., 2010; Hummert et al., 1994; Kite et al., 2005), we expected participant age to have an influence on how positive or negative old people are perceived in various life domains. However, since the evidence for the direction of cohort effects is rather mixed (for an overview, see Kite et al., 2005) and the positivity or negativity of domain-specific age stereotypes has not been investigated systematically before, we did not have specific a priori hypotheses regarding differences in the average positivity of age stereotypes between life domains or their interaction with participant age group.

In addition to an assessment of the content and valence of domain-specific age stereotypes, we were also interested in whether the age at which a person is considered to be "old" might vary across life domains. This allowed us to test whether age thresholds differ according to context and whether age groups may differ with regard to these domain-specific threshold perceptions depending on how near or far they are from becoming old themselves.

A final aim of our study was to provide evidence for the predictive validity of domain-specific views of old people. Assessing domain-specific age stereotypes not only permits a comparison of attitudes toward older people in different life domains, it also provides a means to assess interindividual differences with regard to specific views of old people. In particular, we were interested in investigating the relation between personally held domain-specific age stereotypes and subjective life satisfaction in these life domains (cf. Albert, Labs, & Trommsdorff, 2010). Based on the internalization hypothesis (Rothermund, 2005; Rothermund & Brandtstädter, 2003), we proposed that for participants of the older age groups, positive (negative) views of old age in a particular life domain should have a positive (negative) effect on subjective life satisfaction in the respective domain. We therefore predict that participants' age moderates the effect of domain-specific age stereotypes on life satisfaction, with stronger effects for older persons.

METHOD

Questionnaire Construction

Several life domains were chosen from the aging literature for a multidimensional description of the aging process based on assumed relevance. The selected domains can be associated with gains and losses in old age and therefore we expected them to yield positive as well as negative age stereotypes. Based on the results of a pilot interview study (see subsequently), the set of domains was further refined, comprising the following eight domains: "family and partnership" (FP), "friends and acquaintances" (FA), "religion and

spirituality" (RS), "leisure activities and social or civic commitment" (LC), "personality and way of living" (PL), "financial situation and dealing with money-related issues" (FM), "work and employment" (WE), and "physical and mental fitness, health, and appearance" (PH). Each one of these domains has different associations with age and the aging process, and therefore, they have instigated research on their own, but so far, there has been no attempt to compare attitudes toward older persons in all of them simultaneously.

To make sure that domains and items relevant for the actual aging process were included in the questionnaire, we first conducted an interview study to assess salient beliefs and attitudes about age and aging in the selected life domains. A convenience sample of $N = 14$ older participants (age $M = 73$ years, minimum = 56, maximum = 87) was recruited by lab assistants in their personal environment. In an open format interview, the participants were asked about their beliefs and attitudes on actual and expected changes and shifts in importance that, in their opinion, are due to age and the aging process. An example question for the work and employment domain was "How does age, in your opinion, affect work, meaning your employment and everything that is associated with it? What does change with age, what is getting more important, what is getting less important? Which age-related changes do you expect in this domain, or have you experienced? Is there something in the domain of work and employment, maybe a situation or a characteristic where in your opinion, age related changes are most apparent?" The answers were thematically grouped in a discussion process between the two authors, and topics mentioned most frequently were condensed to single items (see Supplementary Table 1 for interview statements and coding categories). To stay as close as possible to the statements in the interview study and therefore create items that were highly typical and representative for the respective domains, full sentence statements expressing evaluations of persons in real life situations were chosen as items instead of general trait attributes (see Supplementary Table 2 for item statements). Each item consisted of two statements representing opposite poles of a stereotypic belief about age (e.g., "old persons . . . have few friends and acquaintances vs. . . . have many friends and acquaintances"). The two statements that represented an item were linked by an 8-point bipolar scale. This process resulted in 27 bipolar items, with 3 items for each life domain (to cover the most important aspects that had been mentioned in the pilot study, 5 and 4 items had to be created for the domains health and fitness and leisure activities and social or civic commitment, respectively).

Sampling Procedure

Participants were recruited as part of a larger study on "Views on aging and beliefs on life in older age." To obtain a large, heterogeneous life span sample from an East

Table 1. Sociodemographic Information for the Total Sample and for the Separate Birth Cohorts

	Total sample (N = 700)	born 1969–1978 (n = 148)	born 1959–1968 (n = 148)	born 1949–1958 (n = 128)	born 1939–1948 (n = 130)	born 1929–1938 (n = 146)
Sex: female, n (%)	349 (49.9)	76 (51.4)	69 (46.6)	64 (50)	65 (50)	75 (51.4)
Age, M (SD)	54.37 (14.55)	35.05 (2.99)	44.77 (2.94)	54.97 (2.77)	65.4 (3.07)	74.7 (2.85)
Marital status, n (%)						
Single	68 (9.7)	31 (20.9)	17 (11.5)	12 (9.4)	2 (1.5)	6 (4.1)
Married or partnership	517 (73.9)	113 (76.4)	101 (68.2)	100 (78.1)	105 (80.8)	98 (67.2)
Separated or divorced	68 (9.8)	3 (2.1)	23 (15.6)	11 (8.6)	15 (11.6)	16 (11)
Widowed	36 (5.1)	0 (0)	0 (0)	4 (3.1)	7 (5.4)	25 (17.1)
Other or n/a	11 (1.6)	1 (0.7)	7 (4.8)	1 (0.8)	1 (.8)	1 (0.7)
Education, n (%)						
Apprenticeship or vocational school	216 (30.9)	52 (35.2)	45 (30.4)	42 (32.8)	34 (26.2)	43 (29.5)
School for master craftspeople	124 (17.7)	16 (10.8)	27 (18.2)	18 (14.1)	30 (23.1)	33 (22.6)
University degree	315 (45)	72 (48.7)	62 (41.9)	67 (52.4)	62 (47.7)	52 (35.6)
Other or n/a	45 (6.5)	8 (5.5)	14 (9.5)	1 (0.8)	4 (3)	18 (11.3)

and West German population, we contacted local registry offices in two middle-sized and roughly comparable German cities (Jena and Erlangen). We received birth and address data from a random sample of 10,000 men and women, 250 for each sex, birth cohort (born years 1929–1938, 1939–1948, 1949–1958, 1959–1968, and 1969–1978), and city, respectively. In a first wave, we randomly drew 70 men and 70 women from each city and birth cohort. They were sent a letter describing the purpose of the study and were asked to send back an enclosed postcard if they were interested in participating. If the postcards were returned by the participants, we sent them a questionnaire package, and they had 3–4 weeks to fill it in and again return it via mail. Participants who completed and returned the questionnaire were reimbursed with a charity lottery ticket worth €8 (approximately $10). After this first wave of letters, we calculated the initial response rate and repeated the procedure until 35 persons in each cell stratified for sex, birth cohort, and city had agreed to participate. Response rates, and therefore the number of people that had to be contacted to obtain the aspired sample size, differed for age group and sex but not for place of residence (East vs. West Germany). In general, females and middle-aged persons (born 1939–1948 and 1949–1958) were more likely to participate. These differences might have occurred because the topic of the study was particularly interesting for those who are older or approaching older age. Additionally, the questionnaire length and the reimbursement amount might have caused a smaller response rate among younger working persons. In total, we sent out 4,090 letters, 862 people agreed to participate (21% response rate), and we received 769 completed questionnaires, yielding a total response rate of 19%.

Sample

We excluded 69 participants (9%) who had missing values on the questionnaire assessing age stereotypes, so that our final sample consisted of 700 persons. Table 1 shows a description of the final sample and contains sociodemographic information for the separate birth cohorts.

Measures

The questionnaire contained various instruments on coping resources, preparation for old age, and well-being. Of interest for the present study were questions regarding sociodemographic information, the newly developed instrument on age stereotypes in different life domains, and a questionnaire on domain-specific life satisfaction.

Age stereotypes in different life domains.—To investigate whether the evaluations for "old persons" represent independent latent dimensions of the age stereotype for life domains, we conducted a Priniciple Axis Factor Analysis (PAF) with Varimax rotation on the 27 items representing evaluations of "old persons" across all life domains (see Table 2 for the results of the factor analysis and Supplementary Table 2 for the items). The KMO criterion yielded a very good sampling adequacy, with KMO = .84, and Bartlett's test of sphericity was significant, $\chi^2(351) = 7,849.54$, $p < .001$, indicating sufficient intercorrelations among variables. The Scree Plot suggested an eight-factor solution, and eight factors had an eigenvalue > 1, explaining 68% of the total variance. The pattern of the factor loadings for the 27 items in the rotated solution confirmed a perfect grouping of the items into the eight life domains that were specified for the construction of the questionnaire: Those items that were constructed to measure the age stereotype in a specific life domain formed the respective scales by showing substantial loadings (≥.4) on the respective domain factor (Only one item [domain FM—Item 3] had a loading below .40 on the intended factor. But since the corrected item-total correlation and α for the FM scale were acceptable, the item did not load on other factors, and we had a theoretical rationale, we decided to keep the item to retain a minimum of three items per scale.) and no cross loadings (≥.3) on other factors, yielding a simple factor structure.

Table 2. Factor Loadings, Communalities, Eigenvalues, and Cronbach's Alpha for Items Assessing Domain-Specific Views of "Old Persons"[a]

Item (negative pole)	Rotated factor loadings[b]								
	PH	LC	FA	FP	RS	PL	FM	WE	Communalities
FP conflicts				.70					.57
FP fulfillment				.70					.54
FP loneliness				.71					.67
FA new friendships			.65						.50
FA few friends			.80						.79
FA maintain friendships			.70						.60
RS critical					.87				.79
RS hollow					.91				.85
RS meaning					.40				.19
LC activities		.75							.62
LC commitment		.59							.45
LC opportunities		.64							.47
LC energy		.76							.67
PL problems						.79			.67
PL important matters						.72			.58
PL openness						.62			.53
FM economical							.84		.74
FM financial burden							.87		.79
FM support							.21		.10
WE work								.61	.50
WE inferior								.82	.76
WE retirement								.44	.29
PH sickness	.65								.52
PH unattractive	.55								.37
PH problems fitness	.57								.43
PH disabled	.82								.75
PH dependence	.72								.61
Eigenvalue	6.71	2.38	1.96	1.68	1.63	1.57	1.23	1.20	
% Variance	24.84	8.82	7.24	6.24	6.04	5.81	4.57	4.46	
Cronbach's alpha	.83	.86	.83	.80	.76	.79	.67	.72	

Notes: FA = friends and acquaintances; FM = financial situation and dealing with money-related issues; FP = family and partnership; LC = leisure activities and social or civic commitment; PH = physical and mental fitness, health and appearance; PL = personality and way of living; RS = religion and spirituality; WE = work and employment.

[a] The complete list of item statements is presented in Supplementary Table 2.

[b] Cross-loadings <.3 are suppressed.

Therefore, we combined the items that grouped together to eight scales, each scale representing the positivity of the age stereotype for one of the eight life domains. The resulting three- to five-item scales had good to very good internal consistencies (Cronbach's alphas ranging from .67 for domain FM to .86 for domain LC; mean α = .78). Factor loadings, eigenvalues, Cronbach's alphas, and communalities for the eight scales are presented in Table 2.

Domain-specific age thresholds.—To assess age thresholds for the different life domains, participants had to indicate the age beyond which they would consider a person as "old" in the respective life domain ("From what age on would you consider a person as old in the domain X . . . ?").

Life satisfaction for specific life domains.—After finishing the questions regarding age stereotypes, participants had to indicate for each life domain how satisfied they currently were with their personal situation in this life domain. For all but two domains, life satisfaction was assessed by a single question ("How satisfied are you at the moment with your personal situation in the domain X?"). The dimensions FP and PH were split up, to cover different aspects of these domains in more detail: Two separate estimates were given for FP (one for family and one for partnership), and four separate estimates were given for PH (one for physical fitness, mental fitness, appearance, and health, respectively). The items were then recombined to scales, resulting in a two-item scale for FP (α = .65) and a four-item scale for PH (α = .74).

RESULTS

Domain-Specific Age Thresholds

As a first step, we analyzed whether age thresholds for categorizing a person as "old" are context specific and whether these age thresholds also vary depending on the age of the perceiver. Domain-specific age thresholds were subjected to a mixed model analysis of variance (ANOVA) with life domain as a repeated measures factor and birth cohort (1929–1938, 1939–1948, 1949–1958, 1959–1968, and 1969–1978) as a between-subjects factor. The analysis

yielded a significant main effect for life domain, $F(7,655) = 121.88$, $p < .001$, $\eta_p^2 = .57$ (see Figure 1a). The age at which someone is considered as "old" was lowest for the work domain (~60 years); and highest for the domain of family and partnership (~70 years); for all other domains, age thresholds ranged between 65 and 67 years. Additionally, a significant main effect of birth cohort was found, $F(4,661) = 11.49$, $p < .001$, $\eta_p^2 = .07$, indicating that across domains, age thresholds increased linearly from the youngest to the second-oldest cohort but then showed a slight decrease in the oldest cohort (see Figure 1b). The two main effects were qualified by a significant interaction term, $F(28,2632) = 2.19$, $p < .001$, $\eta_p^2 = .02$. The effect size of the interaction effect, however, was small (Cohen, 1988) and a similar pattern of cohort effects emerged for all life domains.

Domain-Specific Age Stereotypes

In order to assess our hypothesis that perceptions of "old persons" differ between life domains and to investigate whether participants' age has an impact on domain-specific age stereotypes, we computed a mixed model ANOVA for the age stereotype ratings with life domain as a repeated measures factor and birth cohort as a between-subject factor. The ANOVA yielded significant main effects for life domain, $F(7,688) = 156.84$, $p < .001$, $\eta_p^2 = .62$, and birth cohort, $F(4,694) = 5.95$, $p < .001$, $\eta_p^2 = .03$, that were qualified by a significant domain by cohort interaction, $F(28,2764) = 6.11$, $p < .001$, $\eta_p^2 = .06$. The pattern of stereotype ratings across conditions is shown in Figure 2. Across cohorts, the most positive ratings for "old persons" were obtained for the domains family and partnership, religion and spirituality, and work. The most negative evaluations of "old persons" emerged for the domains friends and acquaintances, leisure activities and social or civic commitment, and health and fitness. The main effect of birth cohort indicates that across domains, the two oldest cohorts gave generally more positive evaluations of "old persons" compared with younger participants. The significant interaction indicates, however, that the pattern of cohort effects differs strongly across life domains. In particular, the age trend was reversed for the domain religion and spirituality, for which the oldest cohort gave the lowest ratings. In the domains friends and acquaintances, and personality and way of living, the age trend was reversed for the youngest cohort, who gave similarly positive ratings as the two oldest groups. For the work domain, the middle age cohort (mean age 55 years) grouped together with the two oldest cohorts rather than with the youngest cohorts. Finally, for the domains leisure activities and social or civic commitment and finances, no strong age differences were observed.

Predictive Validity: Relations Between Domain-Specific Age Stereotypes and Life Satisfaction

To test whether differences in the domain-specific evaluation of "old persons" predict domain-specific life satisfac-
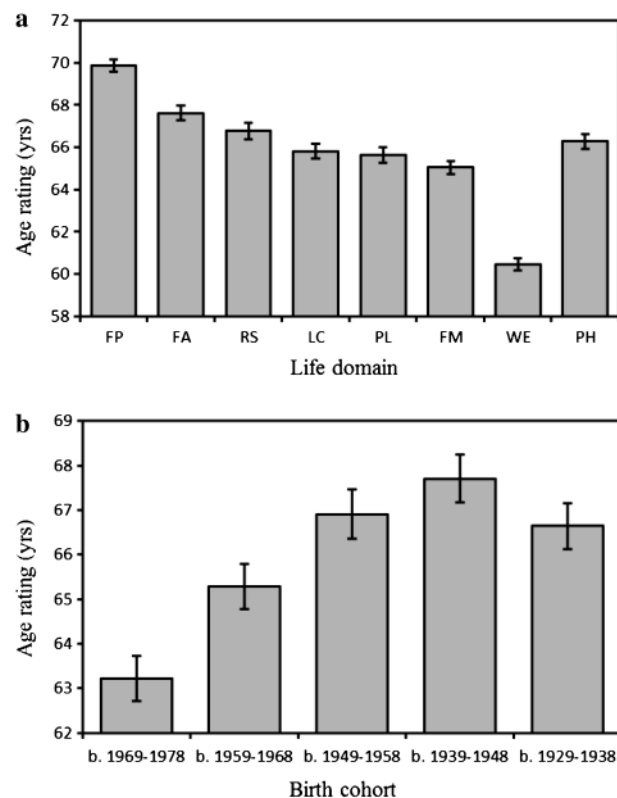

Figure 1. Ratings of age thresholds in the eight life domains (**a**) and for the five participating birth cohorts (**b**); bars represent standard errors. *Note.* FA = friends and acquaintances; FM = financial situation and dealing with money-related issues; FP = family and partnership; LC = leisure activities and social or civic commitment; PH = physical and mental fitness, health and appearance; PL = personality and way of living; RS = religion and spirituality; WE = work and employment.

tion, we computed a profile correlation between the stereotype ratings and life satisfaction ratings across the eight life domains for each participant. A positive correlation coefficient indicates similar rating patterns for age stereotypes and subjective life satisfaction across domains, a correlation coefficient of zero indicates no relationship, and negative correlation coefficients indicate that negative (positive) age stereotypes in a domain go along with higher (lower) life satisfaction in the respective domain. The profile correlations in our sample were distributed with $M = 0.03$ ($SEM = 0.016$) and differed marginally significantly from a distribution of nonrelated profiles, $t(658) = 1.93$, $p = .05$. In line with our assumption that with increasing age, domain-specific age stereotypes should become more predictive for domain-specific life satisfaction, we found a positive correlation between participants' age and their individual profile correlations, $r = .18$, $p < .001$. To have a further look into this relationship and to investigate the effect of positive or negative age stereotypes and life satisfaction separately for each life domain, we computed a series of moderated multiple regression analyses (Aiken & West, 1991). For each life domain, life satisfaction was predicted
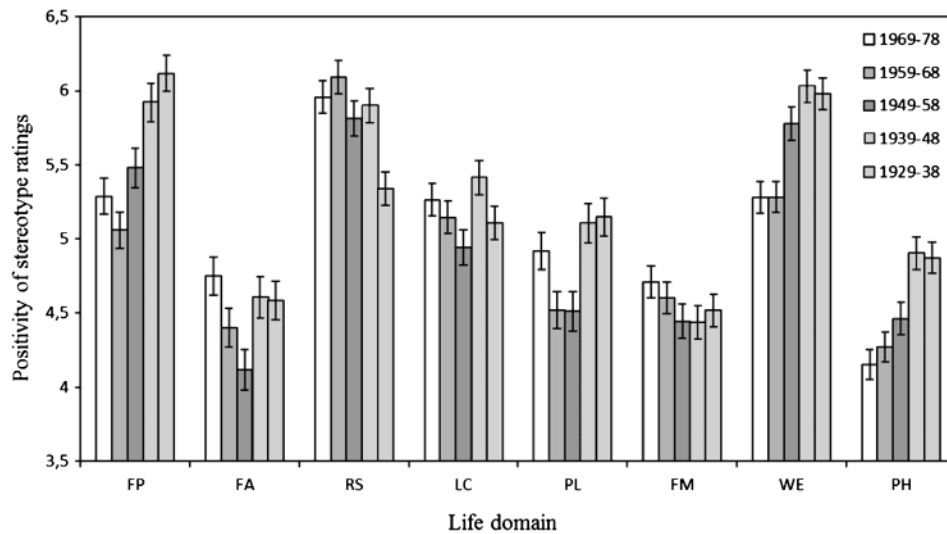
Figure 2. Ratings of "old persons" in the eight life domains for the five participating birth cohorts. Bars represent standard errors. *Note.* FA = friends and acquaintances; FM = financial situation and dealing with money-related issues; FP = family and partnership; LC = leisure activities and social or civic commitment; PH = physical and mental fitness, health and appearance; PL = personality and way of living; RS = religion and spirituality; WE = work and employment.

by the evaluation of "old persons" in the respective domain, participant age, and by the age stereotype by age interaction (see Table 3). For all life domains, personally held age stereotypes emerged as a significant positive predictor of an individual's life satisfaction, that is, more positive (negative) age stereotypes in a domain predicted higher (lower) life satisfaction in the respective domain. For five of the eight life domains (FP, FA, RS, LC, and PH), the regression weight of the interaction term was also significant and positive, indicating that the slope of the regression of domain-specific life satisfaction on age stereotypes in the respective domain was steeper for older than for younger participants (see Figure 3 for an illustration of this effect for the domain family and partnership).

Discussion

Starting from the assumption that age stereotypes and views on aging are context dependent (Casper et al., in press; Diekman & Hirnisey, 2007; Kite et al., 2005; Levy & Leifheit-Limson, 2009), we developed a new questionnaire covering stereotypic views of old persons in various life domains. A factor analysis of the stereotype items yielded eight distinctive dimensions of evaluative age stereotypes that corresponded to the life domains that were covered by the different stereotypic statements. Apparently, thinking about old people in different contexts led to distinct and independent rating patterns in the items covering specific life domains.

Our data revealed strong context dependencies in how old persons are perceived and regarding the categorization of persons as being old. Age thresholds for being perceived as old differed markedly between life domains, with the work and employment domain yielding the first age threshold for ascriptions of being old, whereas the family and partnership domain was characterized by a rather high age threshold. In addition, evaluations of old people differed

Table 3. Moderated Regression Analyses of Domain-Specific Life Satisfaction (DSL) on Domain-Specific Age Stereotype (AS), Age, and Their Interaction (AS × Age)

	Criterion: DSL							
Predictors[a]	FP	FA	RS	LC	PL	FM	WE	PH
AS	.29***[b]	.10**	.15***	.09*	.07*	.16***	.13***	.18***
Age	.01	.13***	−.04	.21***	.18***	.20***	−.09*	.03
AS × Age	.15***	.09**	.12**	.10**	−.05	−.01	−.03	.07*
R^2	.12***	.04***	.05***	.06***	.04***	.06***	.02**	.04***

Notes: FA = friends and acquaintances; FM = financial situation and dealing with money-related issues; FP = family and partnership; LC = leisure activities and social or civic commitment; PH = physical and mental fitness, health and appearance; PL = personality and way of living; RS = religion and spirituality; WE = work and employment.

[a] Predictor variables were centered in order to avoid a possible confounding of main effects and interaction effects (Aiken & West, 1991).

[b] Standardized regression coefficients (β's).

*p < .05; **p < .01; ***p < .001 (one tailed).

Figure 3. Age as a moderator between the relationship of age stereotype and domain-specific life satisfaction, illustrated for the domain "family and partnership." *Note.* "Young" and "old" as well as "negative" and "positive" represent the respective mean value ±1 *SD*.

markedly between the different domains, with the most negative ratings occurring for the domains of health and fitness, friends and acquaintances, and finances, whereas more positive evaluations of old persons were given with respect to family and partnership, religion and spirituality, and work. Absolute differences between evaluations of old persons between domains should be interpreted with caution, however, given that domain-specific age stereotypes were assessed with items differing in content and wording. Rather than reflecting purely context-specific attitudes toward old persons, the differences might also be influenced by varying difficulties of the items that were selected for the different life domains.

Another interesting possibility regarding the interpretation of context differences in age stereotypes relates to gender-specific age stereotypes (e.g., Antonucci, Blieszner, & Denmark, 2010; Barrett & von Rohr, 2008; Laditka, Fischer, Laditka, & Segal, 2004). Although the gender of the rating target ("old persons") was not specified in our study, different contexts or items might have evoked predominantly images of old men or old women (e.g., the finance and work domains might have been associated with the impressions of old men, whereas ratings regarding old persons in the family domain might have focused on impressions of old women). These context–gender associations might be responsible for at least some of the variance that we observed between age stereotypes in the different domains. Our current data do not allow a more specific test of this hypothesis, but it would be interesting to compare domain-specific age stereotypes for old women and old men with our instrument in future research.

Additional noteworthy findings regard the cohort differences that we observed in perceptions of age thresholds and in the domain-specific evaluations of old persons. Participants of the younger cohorts reported lower age thresholds and gave less positive evaluations of old persons. This general trend can be explained with a tendency to perceive members of other groups less positively, which has been shown to exist especially for younger persons (Chasteen, 2005; Kite et al., 2005). However, previous evidence instead supports a different explanation of these cohort differences in terms of a positive shift in personally held views on old age that occurs among older participants (Rothermund & Brandtstädter, 2003; Rothermund, Wentura, & Brandtstädter, 1995; Wentura & Brandtstädter, 2003). Such an accommodative shift helps to protect self-views against negative age stereotypes and might result from focusing on the positive sides of old age and aging (Rothermund et al., 1995; Wentura & Brandtstädter, 2003) or from projection processes (Krueger, 2000) that lead to a transfer of mostly positive attributes of the self onto personal age stereotypes (Rothermund & Brandtstädter, 2003).

Cohort differences in age thresholds and evaluations of old persons were also found to depend on life domains. In particular, older participants had more positive age stereotypes than younger participants for the domains family and partnership, work and employment, and fitness and health, but no such age differences in age stereotypes were found for the domains of friends and acquaintances, leisure activities and social or civic commitment, religion and spirituality, and finances. A possible though speculative reason for the negative or neutral age gradients in the latter domains might be that personal experiences of old people in these life domains might confirm rather than disconfirm prevalent negative age stereotypes for the respective life domains. In this case, using personal experiences as a basis for judging old people in the respective domains would lead to a consolidation of negative age stereotypes rather than supporting an age-related positive shift in age stereotypes.

Finally, our data also provide initial evidence for the predictive validity of domain-specific age stereotypes. In accordance with the assumption that age stereotypes tend to become incorporated into the self-concept once a personal age identification as being old is adopted, we found that for the older participants in our sample, domain-specific age stereotypes were positively related to subjective life satisfaction in the respective life domains. Because we can only report cross-sectional data, we cannot rule out the possibility that this positive relation could also be due to an effect of domain-specific life satisfaction on personally held age stereotypes (i.e., older persons who are more satisfied with their lives might give more positive ratings for "old persons"). However, there is evidence from longitudinal studies (Rothermund & Brandtstädter, 2003; Wurm et al., 2010) that personally held age stereotypes indeed have a causal influence on the self-concept and behavior. A possible pathway of this influence might be that age stereotypes influence the view of oneself in the future ("possible selves"; Markus & Nurius, 1986). Future research might consider domain-specific characteristics of this transmission process (for initial evidence, see Rothermund, 2005).

Furthermore, the domain specificity of age stereotypes might also be important in a more applied context, such as preparing oneself for old age. A negative stereotype in a certain domain might lead to more concerns and maybe better preparation for the challenges of old age, whereas for other domains, a more positive age stereotype might suggest that specific preparations in this domain appear unnecessary. The nature and consequences of this relationship might be an interesting area for further research and also have implications for senior counseling practice. Hence, we conclude that our findings further attest to the central role that age stereotypes play for self-evaluations, behavior, physical health, and well-being in later life (Horton, Baker, Pearce, & Deakin, 2008; Levy, 2003; Rothermund, 2005) and that extending this line of research with regard to contextual influences offers the possibilities for interesting further research in this area.

SUPPLEMENTARY MATERIAL

Supplementary material can be found at: http://biomed.gerontologyjournals.org/.

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