Looking Too Old?

How an Older Age Appearance Reduces Chances of Being Hired

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Abstract

Building on theories of impression formation based on faces, this research investigates the impact of job candidates' facial age appearance on hiring as well as the underlying mechanism. In an experiment, participants decided whether to hire a fictitious candidate aged 50 years, 30 years or without age information. The candidate's age was signaled either via chronological information (varied by date of birth) or via facial age appearance (varied by a photograph on the résumé). Findings showed that candidates with older-appearing faces—but not chronologically older candidates—triggered impressions of low health and fitness, compared to younger-appearing candidates. These impressions reduced perceptions of person-job fit, which lowered hiring probabilities for older-appearing candidates. These findings provide the first evidence that trait impressions from faces are a determinant of age discrimination in personnel selection. They call for an extension of current models of age discrimination by integrating the effects of face-based trait impressions, particularly with respect to health and fitness.

Words: 157

Keywords: Age Discrimination, Facial Age Appearance, Person-Job Fit, Hiring, Fitness

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Recently, as the older population is dramatically increasing in Western societies, age has become a major topic (e.g., The U.S. Census Bureau, 2001; European Commission, 2012). Among other things, it leads to a more age-diversified workforce, a development that raises concerns about age-based discrimination in personnel selection. Experimental research has shown that this is indeed a pressing issue: younger workers are evaluated as more competent and are more frequently hired than older ones, even when qualifications are equal (see Gordon & Arvey, 2004, for a meta-analysis of the findings).

Age discrimination models often assume that discrimination is driven by stereotypes of older workers — by mostly negative beliefs about older workers' competence, efficiency, and motivation (Posthuma & Campion, 2009; Perry, Kulik, & Bourhis, 1996; Shore & Goldberg, 2005). Recent models suggest that stereotypes can be activated by knowing a person's age but also by sensory cues in the face, voice, and body. Sensory cues, particularly from the face, lead to inferences concerning the person's traits and thus influence how he or she is perceived (Freeman & Ambady, 2011; Zebrowitz, 2006; Bodenhausen & McCrae, 2006). Trait impressions derived from younger faces differ from those derived from older faces (Zebrowitz, Franklin Jr, Hillman, & Boc, 2013; Zebrowitz, Franklin Jr, Boshyan, Luevano, Agrigoroaei, Milosavljevic, & Lachman, 2014). Therefore, trait impressions triggered by older- and younger-appearing faces—largely neglected in models and empirical studies of age discrimination—are the starting point for our research. We investigate the impact of facial age appearance (FAA) on hiring decisions and examine the underlying mechanism. Drawing on models of impression formation (Freeman & Ambady, 2011; Zebrowitz, 2006), we expected an older FAA to reduce the likelihood of being hired, an effect we expected to be driven by unfavorable impressions related to health and fitness.

This study makes several contributions to research on age discrimination. Although face-based trait impressions have been demonstrated to be of central importance in explaining

behaviors in other contexts (e.g., criminal justice decisions, Eberhardt, Davies, Purdie-Vaughns, & Johnson, 2006), the topic has been ignored in the literature regarding age discrimination in organizations. Moreover, the study unravels a specific mechanism that drives face-based age discrimination. This is of not only theoretical but also practical relevance: knowledge of the mechanisms involved and the ways they operate ultimately helps in designing measures to reduce discrimination.

Drivers of age discrimination in organizations

Current models of age discrimination in organizations consider age stereotypes to be a crucial component (e.g., Perry, Kulik, & Bourhis, 1996; Shore & Goldberg, 2005). For example, the congruency model of age discrimination assumes that decision makers compare the requirements of the job with the perceived characteristics of the candidate and that assessment of the candidate can thus be influenced by age stereotypes. These stereotypes include the belief that older workers are more resistant to change, less able, motivated, flexible, capable of learning new things, and less likely to stay in the company for a long time. However, older workers are also stereotyped as more stable, honest and trustworthy than younger workers (Posthuma & Campion, 2009; Ng & Feldman, 2012). Thus, age discrimination occurs when decision makers perceive a mismatch between requirements of the job (e.g., openness to change) and assumed characteristics of the candidate, based on age stereotypes (e.g., resistance to change). Experimental evidence confirms that knowing a candidate's age can indeed activate age stereotypes, which then influence evaluations and hiring decisions (e.g., Krings, Sczesny, & Kluge, 2011).

Recent models of person construal point to another cause of age discrimination. They acknowledge that, in real life, sensory cues are involved the first time we see or hear a person. We quickly derive impressions from these cues, most notably from the face, and infer person attributes that facilitate our adaptive behaviors (Zebrowitz, 2006; Gibson, 1979). Perceptions of others are accomplished through a dynamic system which involves a constant interaction

between the cue level (visual and/or auditory input), category level (social groups), stereotype level (beliefs and expectancies about the characteristics of a certain social group) and higher-order level (e.g., task demands, motivation; see Freeman and Ambady, 2011). That is, not only higher-level elements such as age stereotypes but also elements from the cue-level must be considered when seeking to understand how personnel decisions about younger and older workers are made.

There is ample evidence that we judge others on the basis of their facial appearance. This is true across age groups and cultures (Dion, 2002; Langlois, Kalakanis, Rubenstein, Larson, Hallam, & Smoot, 2000; Zebrowitz et al., 1993). Moreover, there is considerable consensus in judgments (McArthur & Baron, 1983; Zebrowitz, 2011). Trait impressions are partly based on cues from the face (Zebrowitz, 1996; Zebrowitz, Fellous, Mignault, & Andreoletti, 2003). Indeed, impressions from faces have various behavioral consequences (e.g., judgments of personality traits influence voter decisions, Olivola & Todorov, 2010; candidates' gender-typical facial appearance impacts hiring decisions, Sczesny & Kühnen, 2004; attractiveness affects hiring decisions; Dipboye, Arvey, & Terpstra, 1977).

It has been shown that an older physical appearance primarily signals a lack of fitness (Zebrowitz & Montepare, 2008). Specifically, older faces consistently trigger negative impressions of health and fitness. In a recent study, Zebrowitz et al. (2013) showed that this holds true across various sets of face pictures, independent of the rater's age (Zebrowitz et al., 2013). The majority of the older face photographs used in this study were of people between 52 and 62 years of age, i.e., the age group of older workers. Moreover, consensus among raters was stronger for the apparent degree of health of older than of younger faces, which indicates that these traits are more easily "read" from older faces than from younger ones. When judging health from faces, perceivers primarily use specific facial features that are related to attractiveness (e.g., symmetry and averageness; Grammer & Thornhill, 1994) and

age (e.g., placement and size of the eyes, nose and mouth; Berry & McArthur, 1986) as cues (Zebrowitz, et al., 2014).

Taken together, the findings suggest that impressions of health and fitness derived from faces may play an important role in explaining age discrimination. Attributions of poor health and fitness may lead to discrimination against older candidates because poor health is known to impair performance (Collins et al., 2005). Accordingly, we expect selection intentions (i.e., the intention to invite the candidate to a job interview) to be less favorable for job candidates with older-appearing faces than for candidates with younger-appearing faces (Hypothesis 1).

We expect FAA to have a stronger impact on selection than chronological age. Facial features are a highly salient and vivid basis for social judgment (Zebrowitz, 1996; Leopold & Rhodes, 2010). Earlier research has shown that decision makers are less aware of the influence of facial appearance than straightforward social category information (e.g., information about a person's gender or ethnicity) on their judgments, and hence less able to control its impact (Sczesny & Kühnen, 2004; Maddox & Gray, 2002). We therefore hypothesize that differences in selection intentions for older-appearing and younger-appearing candidates would will be greater than differences in selection intentions for older and younger candidates whose age is specified by date of birth (Hypothesis 2).

Person-job fit—the perceived match between candidates' qualities and the job requirements—is a key precursor of selection intentions and decisions (Judge & Ferris, 1992; Kristof-Brown, 2000; Rynes & Gerhart, 1990). First impressions, in turn, are known to have a strong impact on person-job fit (Cable & Judge, 1996). This suggests that first impressions of traits derived from faces influence selection decisions indirectly, through their impact on perceptions of person-job fit. Thus, we hypothesize that older-appearing but not chronologically older candidates will trigger less favorable health- and fitness-related first impressions than younger-appearing candidates (Hypothesis 3), and the less favorable first

impressions of health and fitness triggered by older faces will reduce perceptions of person-job fit, leading to less favorable selection intentions (Hypothesis 4).

Preventing age discrimination driven by impressions from faces

Given the prevalence of age discrimination on the labor market, it is important to investigate how such discrimination can be avoided. Only a few studies have analyzed the effectiveness of measures designed to combat age discrimination (for an overview see Gringart, Helmes, & Speelman, 2010). One study found that human resources managers made less biased decisions after being trained in recognizing and avoiding age bias (Perry, Kulik, & Bourhis, 1996). Furthermore, students who received a fact sheet with scientific evidence discounting the most common stereotypes about older workers preferred older candidates (Gringart, Helmes, & Speelman, 2010). Another study shows that misconceptions can be revised when accurate information about older workers' performance is provided, especially when it comes from a credible source (Kuklinski & Hurley, 1996; Palmore, 1999). These findings suggest that interventions that focus on raising awareness of age stereotypes are effective in reducing age discrimination.

Interventions that primarily target cognitive beliefs about older workers (i.e., age stereotypes), however, may be less effective in reducing appearance-based age discrimination, because trait impressions are strongly driven by facial cues (Zebrowitz et al., 2014) and perceivers may not be aware of the impact of such age cues on their decision making. Indeed, Sczesny and Kühnen (2004) found that participants were unable to correct for the impact of stimulus persons' (gender-typical) physical appearance on their hiring decisions, because they lacked meta-cognitive knowledge about the potential effects of these features (e.g., of typically masculine features such as a wide chin and small eyes) on their judgement.

Anonymous applications that do not contain facial or demographic information may help to avoid the impact of FAA. This anti-discrimination measure is widespread in the United States (see: http://www.eeoc.gov/), however, research on its effectiveness is scarce

(IZA Research Report No. 27, 2010). Some studies show encouraging results: Golding and Rouse (2000) found a positive effect of anonymous hiring procedures for women. Two field studies using Swedish data showed that employers often selected interviewees based on gender and ethnicity, but not when an anonymous procedure was used (Åslund & Nordström Skans, 2007; Åslund & Nordström Skans, 2012).

We tested the effectiveness of anonymous applications in reducing age discrimination in the hiring process based on both facial appearance and chronological age. We hypothesized that selection intentions for candidates with an anonymous résumé would be more favorable than for older-appearing as well as objectively older candidates (Hypothesis 5a) and that they would not differ from those for younger-appearing and chronologically younger candidates (Hypothesis 5b).

Overview of the Present Research

The purpose of this research was to investigate the impact of FAA on selection intentions and to uncover the underlying mechanism. In order to compare the impact of FAA to that of chronological age, we studied them separately. We included a condition with anonymous job applications to test their effectiveness in reducing age discrimination.

To increase the generalizability of our findings, we also varied candidate gender. Although some studies document that certain forms of age discrimination (e.g., in salary, promotions) are directed more against women than men (Itzin & Phillipson, 1995; Barnum, Liden, & Ditomaso, 1995), meta-analytical evidence from experimental studies shows no consistent evidence for a double standard for older women compared to older men (Kite, Stockdale, Whitley, & Johnson, 2005). Hence, we did not expect interactions between candidate age and gender.

Method

Participants and Design

The study was conducted online. Data were collected in three German-speaking countries (Switzerland, Germany, and Austria) and in the U.S. In total, 760 persons clicked on the study link and 527 of them answered all of the questions (69% response rate). We manipulated candidate age on the fictitious résumé either by specifying the date of birth and age or by including a headshot. In order to ensure that participants perceived the candidate's age approximately as intended (about 30 vs. about 50 years old), we included only those participants who recognized the age of younger candidates as being 25-35 years, and the age of older candidates as 45-55 years. Based on the manipulation check, 191 participants were excluded.[i] The final sample consisted of 336 participants (162 women and 174 men), between 19 and 72 years old (M_{age}= 34.82, SD = 11.83); 72 % (N = 243) were students. 188 participants were from one of the three European countries (99 women and 89 men), between 19 and 67 years old (M_{age}= 34.94, SD = 12.47); 73 % (N = 137) were students. The remaining 148 participants came from the U.S. (63 women and 85 men), between 21 and 72 years old (M_{age}= 34.68, SD = 10.99); 71 % (N = 106) were students.

The experiment was a 2 (Candidate Age: older, younger) x 2 (Source of Age Information: chronological age, FAA) between-subjects design with selection intentions as dependent variable, and health and fitness impressions and perceptions of person-job fit as mediators. Moreover, we added a design-external anonymous job application condition, where no information on the candidate's age (or gender) was provided.

Experimental Materials

Participants were provided with a job advertisement and a résumé in which age and gender were manipulated, or with an anonymous résumé that did not contain demographic information. All materials indicated high qualification for the job. Names in the résumés were either male (Herr Peter Keller/Mr. John Smith), or female (Frau Petra Keller/Ms. Jane Smith), or consisted only of initials (P. K./J. S.) in the case of the anonymous candidate.

The stimulus materials (color photographs) used for the FAA conditions were pretested. Size and cut-out of the photographs as well as pose of the stimulus persons were held constant, to avoid effects of face-ism (for an overview see Archer, Iritani, Kimes, & Barrios, 1983). We then selected six photographs (four women and four men) that were evaluated as showing younger persons and morphed them with April face aging software, to create an older-looking morph (approximately 50 years old) of each of the six stimulus persons. The software enables aging of the face using specific ageing algorithms that were extracted from a database containing faces of several thousands of people's photographs, ranging from 7 to 70 years old. These ageing algorithms are in line with research findings showing that specific facial cues change with age, namely the size and placement of the eyes, nose and mouth, the size of the chin, cheeks and forehead relative to the size of the skull, the condition of the skin (e.g. wrinkled vs. smooth), and finally, the hair of head (color, presence) (Berry & McArthur, 1986). We chose age 50 for older candidates because earlier research had shown that workers of this age are confronted with age discrimination (e.g., Chiu, Chan, Snape, & Redman, 2001).

Results showed that age perceptions were relatively accurate, i.e., younger morphs were evaluated as younger (25-35 years old) and the older morphs as older (45-55 years old). Moreover, all faces were evaluated as equally attractive and likeable. To rule out effects caused by one specific picture, all three male and three female stimulus persons were used.

In another pretest, we examined whether the job and the way it was advertised in the main experiment were age- and gender-neutral (i.e., perceived as equally suitable for younger and older candidates as well as for men and women). The job advertisement contained the job title (travel agent), the name of the travel agency, the required educational degree, and the main tasks of the future incumbent. The job and this job advertisement were judged as age- and gender-neutral.

Predictors: Candidate's Age

To manipulate FAA, we used the photographs of three men and three women, in their older and younger versions, developed in the pretest described above. Examples are shown in Figure 1. The candidate's chronological age was manipulated by specifying date of birth and age (50 or 30 years) in the résumé.

Figure 1. Examples of photographs that were used in the experiment. The younger and the older morph of one male and one female stimulus person are shown.

Criterion: Selection Intentions

Two items assessed selection intentions: "Would you invite the candidate for a job interview?" and "Would you hire the candidate if you had to decide solely on the basis of the documents available?". Responses were indicated on a 7-point Likert scale (1 = *definitely not*, 7 = *definitely yes*; Cronbach's α = .73).

Mediators

The first mediator, *Health and Fitness Impressions,* was measured with four items developed specifically for this study[ii]. Because people readily and quickly form global impressions of others, within milliseconds (Fiske & Taylor, 2013; Gold, Mundy, & Tjan,

2012), the first item referred to the general first impression ("How is your first impression of this person?"). The following three items assessed more specific aspects related to health and fitness ("Is the person mentally fit?", "Is the person physically fit?", "Is the person attractive?"). Note that, as described above, attractiveness is an essential component of health and fitness impressions from faces (Grammer & Thornhill, 1994). Responses were indicated on 7-point Likert scales (1 = *very negative/not at all*, 7 = *very positive/very much*). A principal component factor analysis confirmed that these items could be combined into a single scale (all factor loadings ≥ .73; Eigenvalue of the first factor = 2.25; 56% of explained variance) that captured perceivers' health and fitness impressions of the candidate (Cronbach's α = .74).

The second mediator, perceived *Person-Job Fit*, was measured with four items adopted from Bosak and Sczesny (2008). The items were slightly modified to refer to other-perceptions of person-job fit rather than self-perceptions of person-job fit. Items were: "The person is very well qualified for the advertised job", "It will be difficult for the person to fulfill the job requirements" (reversed), "The person meets the requirements of the advertised job" and "The advertised job corresponds with the skills and abilities of the person". Agreement with these items was measured on a 7-point Likert scale (1 = *not at all, 7 = very much)*. Participants' responses were combined to form the scale *Person-Job Fit* (Cronbach's α = .87).

Covariate: Participant Age

As evaluators' own age may influence the way they evaluate candidates, with older individuals showing more positive attitudes toward aging (Kite et al, 2005), we used participant age (measured in years) as a covariate in the analyses.

Procedure

Participants in the European countries were recruited via e-mails and postings on social media (e.g. Facebook, online forums), whereas participants from the U.S. were sampled using MTurk. The experiment was conducted online, and participants were randomly assigned to an

experimental condition. Participants were asked to assume the role of a personnel manager

and were provided with a job advertisement and the candidate's résumé. In order to make the

situation more realistic, participants were first asked to choose six of 18 interview questions

that they would like to ask the candidate (e.g. "In which areas are you especially competent?",

"Describe some situations where you find it difficult to motivate yourself"; von

Rennenkampff, 2005). Next, they rated the candidate and reported their selection intentions.

After responding to the manipulation checks and providing demographic information,

participants were debriefed and thanked for their participation.

Results

Comparing Younger and Older Candidates

Preliminary analyses of the data showed that, as expected, neither candidate gender

nor participant origin (Europe or the U.S.) had an impact on the results[iii]. They were thus not

included in the main analyses reported below.

To test Hypotheses 1, 2 and 3, we conducted a 2 (Candidate Age: older, younger) x 2

(Source of Age Information: chronological age, FAA) multivariate analysis of covariance

(MANCOVA) with selection intentions and health and fitness impressions (intercorrelation r

$= .58, p < .001$) as dependent variables and participant age as covariate. We then conducted

follow-up t-tests (one-sided), controlling for the influence of the covariate (participant age) by

using the unstandardized residuals of the dependent variables. Means and standard deviations

are displayed in Table 1.

| | | Dependent Variables | | | |
| | | Selection Intentions | | Health and Fitness Impressions | |
Experimental Conditions	N	M	SD	M	SD
Anonymous Candidates	89	4.97	1.19	4.58	0.84
Chronologically Younger Candidates	88	5.14	1.14	4.79	0.81
Chronologically Older Candidates	61	5.10	1.15	4.62	0.82
Younger-appearing Candidates	75	4.94	1.28	4.95	0.90
Older-appearing Candidates	23	4.07	1.47	4.10	0.67

Table 1. Estimated marginal means and standard deviations of selection intentions and health and fitness impressions, by candidate age and source of age information.

Both candidate age, Wilks' $\lambda = 0.93$, $F(2,241) = 9.32$, $p = .000$, $\eta^2 = .072$, and source of age information Wilks' $\lambda = 0.95$, $F(2,241) = 6.54$, $p = .002$, $\eta^2 = .051$, had significant effects. The interaction between candidate age and source of age information was also significant, Wilks' $\lambda = 0.96$, $F(2,241) = 4.52$, $p = .012$, $\eta^2 = .036$. The control variable participant age had no overall effect on selection intentions and health and fitness impressions, Wilks' $\lambda = 0.99$, $F(2,241) = 1.17$, $p = .312$, $\eta^2 = .010$.

Selection Intentions. Results are depicted in Figure 2a. A significant main effect of candidate age emerged showing that selection intentions were less favorable for older candidates than for younger candidates, $F(1,242) = 6.95$, $p = .009$, $\eta^2 = .028$. Source of age information also had a significant effect showing that selection intentions for candidates whose FAA had been presented were less favorable than those for candidates whose chronological age had been indicated through date of birth, $F(1,242) = 12.57$, $p = .000$, $\eta^2 = .049$. Finally, as expected, there was an interaction between the two manipulated variables,

candidate age and source of age information, $F(1,242) = 8.54$, $p = .017$, $\eta^2 = .023$. More specifically, selection intentions for older candidates were less favorable only when the candidates were presented with FAA, $t(243) = 8.94$, $p = .003$, $\eta^2 = .035$. When presenting candidates with information on their chronological age, selection intentions for younger and older candidates did not differ, $t(243) = 0.02 p = .882$, $\eta^2 = .000$. Even though the latter effect was unexpected, the results overall confirmed Hypotheses 1 and 2: Older-appearing candidates had lesser chances of being selected than younger-appearing candidates ($M_{older} = -.90$, $SD_{older} = 0.25$ vs. $M_{younger} = -.03$, $SD_{younger} = 0.14$), whereas chances were equal for chronologically older and younger candidates ($M_{older} = .14$, $SD_{older} = 0.16$ vs. $M_{younger} = .17$, $SD_{younger} = 0.13$).
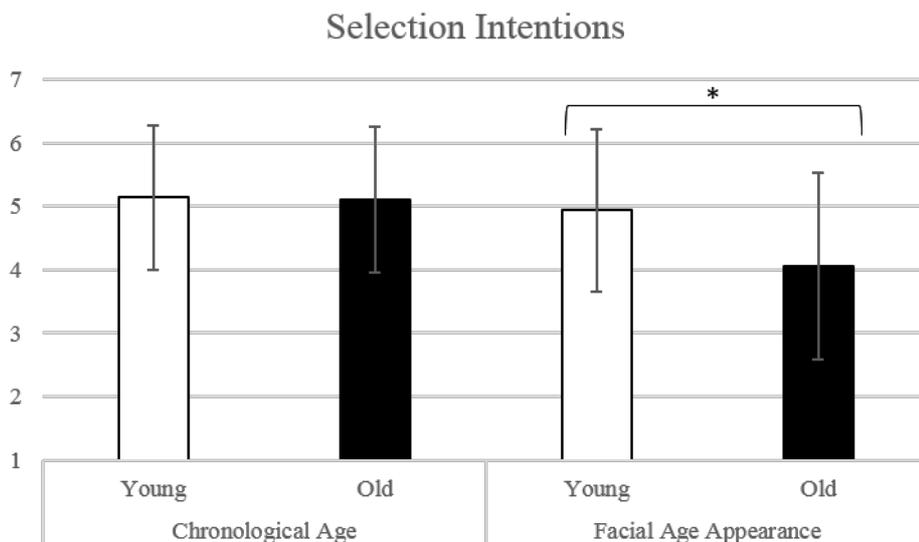

Figure 2a. Effect of candidate age and source of age information on selection intentions.

Note: Higher values indicate more favorable selection intentions. *$p = .01$.

Health and Fitness Impressions. Results are depicted in Figure 2b. There is a significant main effect of candidate age: younger candidates were perceived as healthier and fitter than older candidates, $F(1,242) = 18.71$, $p = .000$, $\eta^2 = .072$. Source of age information had no significant effect, $F(1,242) = 2.36$, $p = .126$, $\eta^2 = .010$, but interacted with candidate age, $F(1,242) = 8.40$, $p = .004$, $\eta^2 = .034$. As expected (Hypothesis 3), older candidates were

perceived as less healthy and fit only in the FAA conditions (M_{older} = -.59, SD_{older} = 0.17 vs. $M_{younger}$ = .26, $SD_{younger}$ = 0.10), $t(243)$ = 18.65, p = .000, η^2 = .071. In the chronological age conditions, there were no differences between health and fitness impressions of younger and older candidates (M_{older} = -.07, SD_{older} = 0.11 vs. $M_{younger}$ = .09, $SD_{younger}$ = 0.09), $t(243)$ = 1.43p = .233, η^2 = .006.
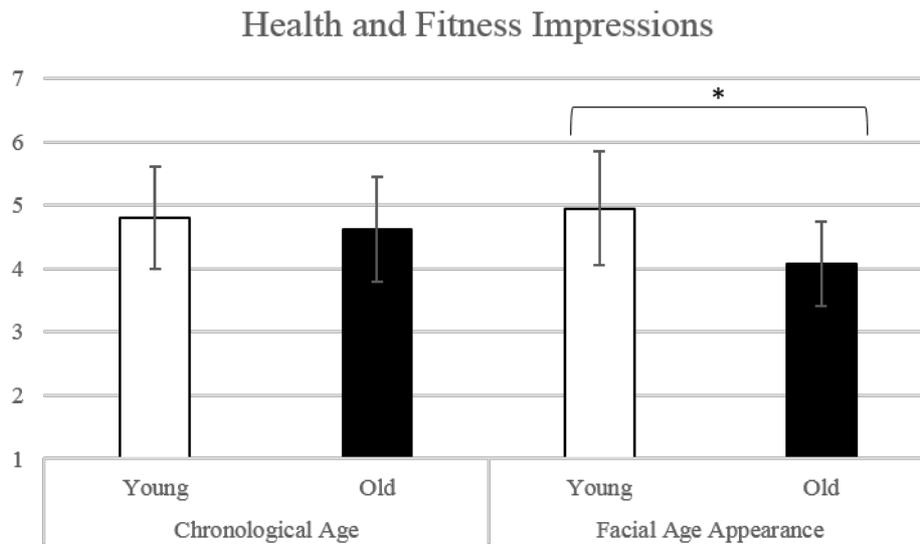

Figure 2b. Effect of candidate age and source of age information on health and fitness impressions. Note: Higher values indicate more favorable health and fitness impressions. *p = .01.

Mechanisms Underlying the Effects of Age Appearance on Selection Intentions

To test Hypothesis 4 — that older age appearance triggers less favorable health and fitness impressions, leading to perceptions of lower job fit, which then result in less favorable selection outcomes — we conducted a serial multiple mediation analysis (Hayes, 2013). We used bootstrapping technique with 5,000 iterations, and calculated accelerated confidence intervals (CI 95 %), controlling for participant age. Results are depicted in Figure 3. As expected, we found a significant indirect effect of FAA on selection intentions through health and fitness impression (see indirect 1 in Figure 3). This indicates that older-appearing

candidates evoked less favorable health and fitness impressions, which predicted less

favorable selection outcomes for these candidates compared to younger-appearing ones. The

indirect effect of FAA on selection intentions through person-job fit was not significant (see

indirect 3 in Figure 3), which shows that perceptions of person-job fit were similar for older-

and younger-appearing candidates. Nevertheless, a lower perceived person-job fit predicted

less favorable selection intentions. Finally and most importantly, the serial multiple mediation

from FAA on selection intentions through health and fitness impression and person-job fit

was fully established, as had been predicted. Thus, older-appearing candidates evoked less

favorable health and fitness impressions, reducing perceptions of person-job fit. This, in turn,

predicted less favorable selection intentions for these candidates, compared to younger-

appearing job candidates (see indirect 2 in Figure 3). The pairwise comparison of the two

indirect effects was not significant (see Table 2). Thus, health and fitness impressions and

perceived person-job fit equally accounted for the effect of FAA on selection intentions.
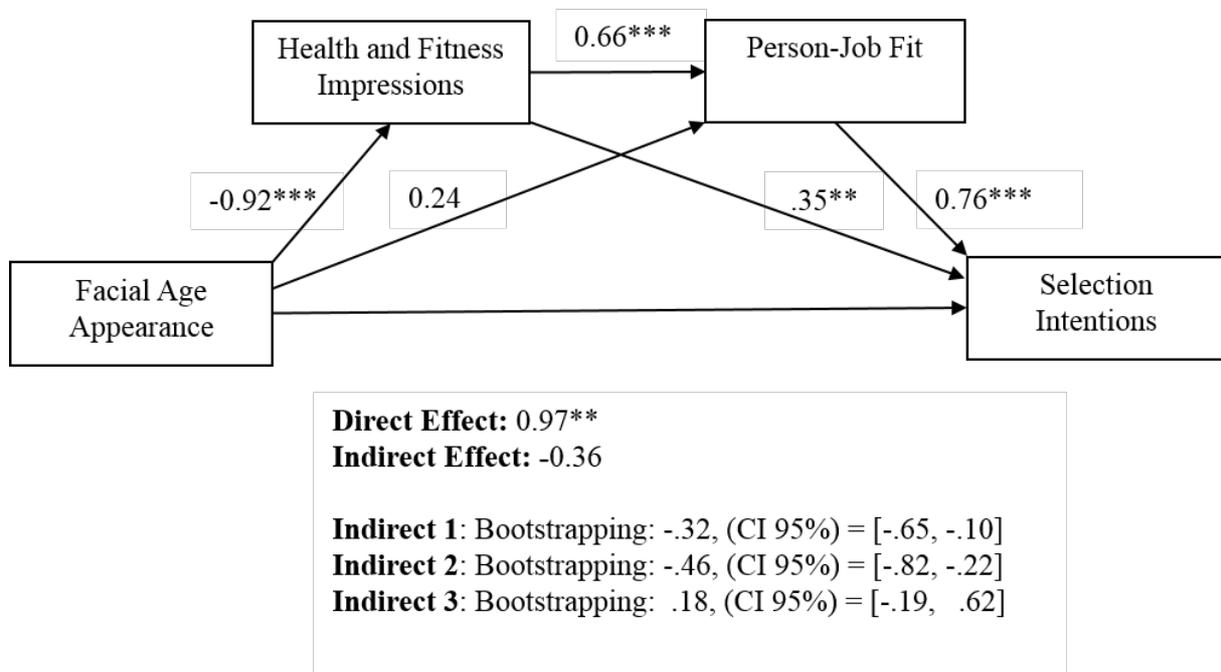

Direct Effect: 0.97**
Indirect Effect: -0.36

Indirect 1: Bootstrapping: -.32, (CI 95%) = [-.65, -.10]
Indirect 2: Bootstrapping: -.46, (CI 95%) = [-.82, -.22]
Indirect 3: Bootstrapping: .18, (CI 95%) = [-.19,   .62]

Figure 3. Results of the serial multiple mediation testing health and fitness impressions and perceived person-job fit as mediators of the effect of candidates' age appearance on selection intentions. Note: $N = 98$. Unstandardized regression coefficients are shown. Facial age appearance was coded as 0 = younger-appearing, 1 = older-appearing. Participant age was used as a control variable. Indirect 1: Facial Age Appearance > Health & Fitness Impression > Selection Intentions. Indirect 2: Facial Age Appearance > Health & Fitness Impression > Person-Job Fit > Selection Intentions. Indirect 3: Facial Age Appearance > Person-Job Fit > Selection Intentions. $*p < .05.$ $** p < .01.$ $*** p < .001.$

Mediator	Bootstrap estimate	*SE*	95% CI lower	95% CI upper
Health and Fitness Impressions	-.32	.13	-0.64	-0.12
Person-Job Fit	.18	.21	-0.19	0.62
TOTAL	-.61	.27	-1.45	-0.09
Contrast	-.50	.22	-0.95	-0.07

Table 2. Indirect effects of candidates' facial age appearance on selection intentions through health and fitness impressions and person-job fit.

Effects of anonymous applications

We expected that selection intentions for candidates presented in an anonymous fashion would be more favorable than for older-appearing and chronologically older candidates (Hypothesis 5a). Additionally, we expected that selection intentions for anonymous candidates would be similarly favorable to those for younger-appearing and chronologically younger candidates (Hypothesis 5b). To test these hypotheses, we conducted a 5 (older, younger, older-appearing, younger-appearing, anonymous) factorial ANCOVA with selection

intentions as dependent variable and participant age as covariate (see Table 1, for means and standard deviations). Follow-up t-tests were one-sided and controlled for influences of the covariate, using the unstandardized residuals of the dependent variable.

A significant main effect of candidate age, $F(4, 330) = 3.78$, $p = .005$, $\eta^2 = .044$, indicated that selection intentions were more favorable for candidates with an anonymous job application ($M = 4.97$, $SD = 1.20$) than for older-appearing candidates ($M = 4.09$, $SD = 1.47$; $t(332) = 3.27$, $p = .002$, $\eta^2 = .066$), as predicted. Contrary to our expectation, selection intentions for chronologically older applicants ($M = 5.11$, $SD = 1.15$; $t(331) = -0.66$, $p = .509$, $\eta^2 = .012$) did not differ significantly from those for anonymous candidates. In line with our prediction, selection intentions for anonymous candidates were similarly favorable to those for younger-appearing ($M = 4.94$, $SD = 1.28$; $t(331) = 0.17$, $p = .868$, $\eta^2 = .002$) and chronologically younger ($M = 5.13$, $SD = 1.14$; $t(331) = -0.90$, $p = .370$, $\eta^2 = .014$) candidates. Finally, results showed that the control variable participant age, did not significantly affect selection intentions, $F(1,330) = 0.85$, $p = .356$, $\eta^2 = .003$.

Discussion

This research examined the impact of FAA on hiring, demonstrating that older-appearing candidates were less likely to be hired than younger-appearing candidates because older age-appearance triggered impressions of lower health and fitness. Building on models of face-based impression formation (Amady & Freeman, 2011; Zebrowitz, 2006), we predicted and found that candidates with older-appearing faces—but not chronologically older candidates—triggered impressions of low health and fitness, compared to younger-appearing candidates. These impressions reduced perceptions of person-job fit, which lowered hiring probabilities for older-appearing candidates.

Past research has largely focused on age stereotypes triggered by chronological age as the driving force of discrimination against older workers. Our study points to an additional path: trait impressions derived from faces, particularly with respect to health and fitness. We

demonstrated that these impressions play a crucial role in recruitment and that they have behavioral consequences, ultimately reducing older-appearing candidates' chances to be hired. The results of our study showed that impressions of low health only emerged with older-appearing candidates but not with chronologically older candidates. Thus, knowing the candidate's age did not activate possible associations between old age and low health in decision makers. Indeed, physical and psychological health problems are neither more prevalent in older than in younger workers (Ng & Feldman, 2012), nor do they seem to be a consistent part of the older worker stereotype (Posthuma & Campion, 2009). Our results indicated that impressions of poor health and fitness were primarily triggered by age-related facial features, suggesting that this path is specific to appearance-based age bias.

The findings of our study have several implications for theory and practice: First, they call for an extension of current models of age discrimination to include the effects of FAA on personnel decisions, through health and fitness impressions. This path is not considered in current models of age discrimination (e.g., Shore & Goldberg, 2005). It is crucial, however, because facial age information and face-based trait impressions, are omnipresent in the context of work. Second, our findings imply that applicants and employees who do not fit the ideal image of health and fitness, i.e., whose facial appearance signals low health or fitness, may experience the discrimination that is typically directed toward older workers. Frequent consequences of discrimination against older workers include lower chances of being hired, less access to training, and greater risk of being laid-off in times of downsizing (Gordon & Arvey, 2004; Weiss & Maurer, 2004). Moreover, age discrimination is particularly prevalent in organizations characterized by rapid change, i.e., organizations that have grown and expect to grow rapidly (Dieckman & Hirnisey, 2007). The results of our study suggest that not only people with older FAA but also people who appear less healthy may be treated similarly, independently of their actual age and health status, and this may be particularly true in organizations that underscore dynamism and change.

Another implication of this study is that some organizational measures typically used to combat age discrimination may be ineffective. For example awareness trainings that increase employers' awareness of common stereotypes and the risk of bias, are one of the most widely used measures (Kulik & Roberson, 2008). Since people are generally unaware of the impact that face-based impressions have on their judgments (Sczesny & Kühnen, 2004, Maddox & Gray, 2002), however, awareness trainings will only be effective if they specifically target facial appearance (i.e., if they raise people's awareness of the impact that an older facial appearance may have on impressions of health and fitness and, ultimately, personnel decisions). A more promising approach, at least in the first phase of a recruitment procedure, would be the use of anonymous application procedures, because they conceal candidates' membership in social categories. In our study, use of anonymous applications indeed eliminated discrimination. But the effectiveness of anonymization depends on various additional factors, including how it is implemented (Åslund & Nordström Skans, 2012). In our study, all dates, demographic information and the picture were removed. This rather strict approach may be necessary to eliminate age discrimination, certain information in the résumé (e.g., listings of time periods with different employers) may still point to the candidate's age.

A note on the absence of effects of chronological age in this study is warranted. Even though we expected candidates' FAA to have a stronger effect on hiring intentions than chronological age, we expected to replicate previous findings (i.e., to find that older candidates were less likely to be hired than younger candidates when chronological age was indicated). Contrary to this expectation, chronological age had no impact on hiring intentions. Two factors may explain this result. First, age bias may be weaker in between-subjects designs than in within-subjects designs, where decision makers compare candidates of different ages (Kite et al., 2005; Kite & Johnson, 1988). Second, the fictitious résumé used in this study described the candidate as highly qualified for the job (e.g., detailed information about qualifications and work experiences). Earlier research has shown that the age bias is

weaker when additional information about a person is provided (e.g., Kite et al., 2005; Posthuma & Campion, 2009). Thus, the unambiguous information about the candidate's qualifications as well as the relatively detailed résumé may have prevented age discrimination based on chronological age. It is noteworthy, however, that these elements did not prevent age discrimination based on FAA. Apparently this process is more robust and is less affected by individuating information about the candidate. The finding also suggests that FAA-based age discrimination may extend beyond situations where decision makers have relatively little information about the candidate (e.g., the first stage of the recruitment process). Later interpersonal contacts (e.g., the interview) provide a rich array of individuating information, which is known to reduce discrimination. If individuating information has little influence on trait inferences based on facial features, however, FAA-based age discrimination is likely to occur after the first stage of recruitment and may even extend to the treatment of older-looking employees within the organization.

Limitations and implications for future research

In order to isolate the effect of FAA, we studied its impact independent of chronological age. The use of a simulation and a between-subjects design was necessary to determine the effect of FAA and demonstrate the specific mechanism that underlies it. The disadvantage of this methodological approach is that the study was somewhat artificial. In reality, decision makers often compare different candidates when deciding on whom to invite for an interview and, in European countries, they have both birth dates and pictures at their disposal. Future research should examine whether the effect of FAA documented in this study can be replicated in a more naturalistic setting.

We focused on health and fitness impressions as a mediator of the relation between FAA and selection outcome. Other trait impressions from faces as well may play a role in explaining age discrimination, particularly in specific organizational contexts. For example, older faces are consistently rated as less aggressive than younger faces (Zebrowitz et al.,

2013). This may be a disadvantage for older-appearing candidates applying for jobs that require a certain degree of aggressiveness and assertiveness, such as a sales job. Exploring the effects of other FAA-based trait impressions on selection as a function of specific job requirements is thus another promising avenue for future research.

We examined the effectiveness of anonymous applications as one approach to reduce face-based discrimination. Although we believe that this is more effective than other measures such as awareness trainings (see above), other strategies may also be promising. Because the effects of older FAA were driven by impressions of poor health and fitness of the candidate, information refuting this impression may reduce the likelihood of discrimination. Interventions such as training candidates to provide information refuting potentially unfavorable health and fitness impressions (e.g., explicit information about good health and fitness through referring to athletic activities in the résumé or during the interview) can eliminate face-based age discrimination and may be a promising avenue for future research and practice in this domain. This would be of both theoretical and practical importance because the findings might provide insight into strategies that older job candidates can use to combat negative first impressions.

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i Omitting these participants did not change key demographic features of the final sample. That is, the final sample is comparable to the original sample of 527 participants who answered all questions, in terms of gender (original sample: 257 women and 270 men), age (original sample: age range 18 and 72 years, mean age = 34.40, SD = 11.83) and student status (original sample: 70%, 369 students). Participants were more likely to fail the age manipulation check in the condition with an older appearing candidate than in the condition with a younger appearing candidate (see Table 1). In light of the mean age of our sample (around 30), this is not surprising, because perceivers' age estimates are more accurate when evaluating persons who have a similar age as the perceivers themselves (Rhodes, 2009).

ii Likeability was also measured ("Is the person likeable?" on a 7-point Likert scale from 1 = *not at* all, 7 = *very much*), but was not included in the factor health and fitness impressions and in the analysis, because it does not refer to health and fitness. Moreover, including likeability in the factor health and fitness impressions did not alter the presented results.

iii Candidate gender was included in a first explorative analysis and was found to be non-significant in interaction with candidate age ($F \leq 1.60$, $p \geq .205$, $\eta^2 \leq .014$). Only a significant main effect of gender was found ($F = 5.34$, $p = .005$, $\eta^2 = .047$), as health and fitness impressions were more favorable for the female candidates. Region (European countries vs. U.S.) was also included in a first explorative analysis and was found to be non-significant ($F \leq 2.34$, $p \geq .099$, $\eta^2 \leq .021$). However, there was a significant main effect of region ($F = 7.40$, $p = .001$, $\eta^2 = .064$) in that participants from the US sample evaluated candidates as healthier and as fitter than participants from the European sample.