



Ageism Affects the Future Time Perspective of Older Adults

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Abstract. These studies tested whether ageism affects the future time perspective (FTP) of older adults. Ageism occurs when someone is classified as “old” and is judged or treated differently as a result. To mimic this, we recruited participants (aged 50+) from Amazon’s Mechanical Turk. We made their age salient, exposed them to negative aging stereotypes, and asked them to complete Carstensen and Lang’s (1996) FTP Scale. Across multiple studies, participants assigned to the ageism conditions rated their futures as having fewer opportunities. This effect was mediated by mood and did not occur for younger adult participants. In addition, as the personal experiences of older adults with ageism increased, their perception of futures opportunities decreased. Thus, ageism reduces the future opportunities older adults see for themselves.

Keywords: future time perspective, focus on opportunities, aging stereotypes, ageism

When older adults are told that they “don’t look their age,” “look good for their age,” or are “young at heart,” it is typically perceived as a complement. However, embedded in these remarks is the assumption that youth is inherently better than old age. This implicit association between “old” and “bad” is strongly endorsed by both younger and older adults (e.g., Axt, Ebersole, & Nosek, 2014) and reflects the fact that there are many negative stereotypes about being old. Older adults are often assumed to be slow, sick, forgetful, grumpy, and set in their ways (Palmore, 1999). Furthermore, although stereotypes about aging are multidimensional, with both positive and negative qualities, negative stereotypes are more common (e.g., Hummert, 1990). Based upon these negative stereotypes, older adults sometimes encounter age-based discrimination in a variety of contexts (see Pasupathi & Löckenhoff, 2002). Taken together, negative stereotypes and discrimination based upon age is defined as *ageism* (Butler, 1969). The overarching aim of the current research was to test the hypothesis that ageism affects older adults’ *future time perspective* (FTP).

FTP broadly refers to the way people conceptualize and connect to the future. As Cate and John (2007) demonstrated, although FTP is often conceptualized as a singular construct, it is actually comprised of two distinct dimensions that have different developmental patterns of change. One dimension of FTP is *focus on opportunities*, which describes how many new plans, goals, and possibilities people perceive their future to hold. People with a strong focus on opportunities see their futures positively. During their remaining lifetime they anticipate being able to pursue many different plans, goals, and activities. A second dimension of FTP is *focus on limitations*, which describes the constraints and restrictions that people anticipate encountering in the future. People with a strong focus on limi-

tations see their futures negatively. Within their remaining lifetimes they anticipate losses, restrictions, and boundaries.

In general, both dimensions of FTP change over the adult lifespan (e.g., Lang & Carstensen, 2002). Relative to younger adults, older adults see their futures as more temporally constrained, possessing fewer opportunities and more limitations (Carstensen, 2006; Carstensen, Isaacowitz, & Charles, 1999). However, there is not necessarily a one-to-one mapping between age and FTP, and large individual differences in FTP among older adults have been reported (Fung, Lai, & Ng, 2001). This is because FTP is a flexible, cognitive-motivational construct that can change over time and across situations. For example, sociocultural events such as the terrorist attacks in the United States on 9/11 or the SARS epidemic in Hong Kong remind people of all ages that life is fragile. This can temporarily lead people of all ages to see their futures as having fewer opportunities and/or more limitations (Fung & Carstensen, 2006).

Although there is ample evidence that FTP changes with age (e.g., Brothers, Chui, & Diehl, 2014; Cate & John, 2007; Lang & Carstensen, 2002; Rakowski, 1979), less is known about the antecedents of this change. One possibility is that it reflects age-related declines in biological and cognitive resources. To adapt to these declines, people shift their goals away from growth and toward maintenance and loss prevention (Ebner, Freund, & Baltes, 2006). They may also change their FTP such that they see their futures as having fewer opportunities and more limitations. Consistent with this, longitudinal data show that higher awareness of age-related losses at baseline predicts reduced FTP during future assessments (Brothers, Gabrian, Wahl, & Diehl, 2016). Thus, it is not necessarily age itself that affects FTP, but rather the emerging awareness of age-related declines. This relationship appears to be especially strong for people who view age-related declines as uncontrollable and an

inevitable part of growing older (Weiss, Job, Mathias, Grah, & Freund, 2016).

One social experience that can trigger awareness of age-related losses is being subjected to ageism (see Diehl & Wahl, 2009). In these studies we tested whether exposure to ageism affects older adults perceptions that their future holds opportunities and/or limitations. When Butler defined ageism in 1975, he described it as a “process of systematic stereotyping of and discrimination against people because they are old, just as racism and sexism accomplish this for skin color and gender. Old people are categorized as senile, rigid in thought and manner, old-fashioned in morality and skills . . . Ageism allows the younger generation to see older people as different than themselves; thus they subtly cease to identify with their elders as human being” (Butler, 1975, p. 35). Thus, ageism occurs when someone is classified as “old” and is judged or treated differently because of that social identity. For older adults, this is a common experience. A demonstration of this comes from Palmore’s (2001) Ageism Survey. This questionnaire asks respondents to indicate whether specific forms of negative ageism have ever occurred to them. These include having been disrespected (e.g., being called an insulting name), assumed to have a disability (e.g., assumed to not hear well), and being the victim of specific form of discrimination (e.g., victimized by a criminal) because of one’s age. In a survey in the United States, almost 80% of adults older than age 60 reported that they had experienced at least one of these forms of ageism (Palmore, 2001; see also McGuire, Klein, & Chen, 2008; Palmore, 2004). More generally, results of the European Social Survey found that ageism is the most widely experienced form of discrimination in their sample, surpassing both sexism and racism (Abrams & Swift, 2012).

We predicted that experiences with ageism should adversely affect how older adults’ perceive their future. Experiencing ageism should remind older adults that society now classifies them as “old” and that others assume they are less capable. Being treated this way may lead older adults to realize that there are social barriers associated with their age that reduce their future opportunities. This may in turn alter their FTP. Preliminary evidence in support of this comes from employment contexts. Older adult employees who perceive their colleagues to have negative aging attitudes also report that there are fewer opportunities available for them to pursue prior to retirement (Bal, Jansen, Van Der Velde, de Lange, & Rousseau, 2012).

Study 1

In Study 1, we experimentally manipulated whether or not older adults were exposed to ageism prior to assessing their FTP.

Older adults assigned to our ageism group were first shown negative age stereotypes. To highlight the self-relevance of these stereotypes, they were also told that they had been selected for the study because they were an older adult. We hypothesized that this would lead them to self-report their futures as having fewer opportunities and more limitations. Procedures for Study 1 (and all other studies described here) were approved by the Institutional Review Board at San Francisco State University and electronic implied consent was obtained from all participants.

Method

Participants

Participants were U.S. residents recruited through Amazon’s Mechanical Turk (MTurk). Individuals interested in the study were asked to indicate their age, year of birth, educational attainment, and health. Of the 740 individuals who completed the demographic questions, only the 55 individuals who reported being 50 or older were invited to complete the study described below for an additional payment.¹ We set our inclusion criteria to 50 based upon research showing that whereas 10–12% of MTurk workers are in their 50s, only 5–7% are aged 60 or older (see Dupuis, Endicott-Popovsky, & Crossler, 2013; Simons & Chabris, 2012). Of the collected responses, we eliminated six: three from repeat IP addresses, and three where the self-reported year of birth and age did not match. This left 49 participants (34 females, 15 males). These participants were on average 56.30 years old (range = 50–73, $SD = 5.71$), and their self-reported health was good ($M = 6.49$, $SD = 1.79$). From this final sample, 23 participants were randomly assigned to the negative stereotype group and 26 to the positive stereotype group. Independent t-tests confirmed that the two groups did not differ in age or self-reported health ($ps > .55$).

Procedure

We manipulated whether participants were exposed to positive or negative aging stereotypes by asking them to complete an “Aging Quiz.” Participants were randomly assigned to one of two versions of this quiz (stereotype valence: positive or negative). In both versions, the quiz consisted of six trivia questions about the aging process. In the positive stereotype condition, the questions assessed knowledge of positive age-related changes (e.g., knowledge of which competencies increase with age). In the negative stereotype condition, the questions assessed knowledge of negative age-related changes (e.g., knowledge of which cognitive domains decline with age). For the full text, see the Appendix of Weiss and Lang (2012). As noted earlier, age-

¹ One concern with using MTurk for survey research targeted at older adults is that participants may falsely report their age in order to become a participant in the study. To discourage false reporting age was not listed as an inclusion criteria for being invited into the full study. We also eliminated responses from participants who completed the prescreening questions more than once, and all participants received compensation (\$0.03) for completing the initial prescreening demographic questions.

Table 1. Average scores on the Focus on Opportunities and Focus on Limitations scales as a function of experimental condition (which varied in terms of age group, stereotype manipulation, and age salience) in Study 1, 2, 3, and 4. Numbers in parentheses represent the standard deviations

	Age group	Aging Stereotype manipulation	Age salience	Focus on Opportunities	Focus on Limitations
Study 1	Older	Positive Stereotype Quiz	Low	32.96 (9.80)	11.57 (5.10)
		Negative Stereotype Quiz	High	24.96 (10.55)	14.96 (4.55)
Study 2	Older	Positive Stereotype Quiz	Low	32.97 (9.77)	12.91 (5.24)
		Negative Stereotype Quiz	High	26.23 (10.72)	14.83 (4.32)
	Younger	Positive Stereotype Quiz	Low	37.54 (8.32)	11.02 (4.59)
		Negative Stereotype Quiz	High	38.89 (8.54)	10.11 (4.43)
Study 3	Older	Positive Stereotype Images	Low	32.74 (9.37)	12.33 (5.29)
		Negative Stereotype Images	High	24.44 (9.38)	15.00 (4.18)
	Older	Positive Nonaging Images	Low	31.74 (9.82)	13.00 (4.60)
		Negative Nonaging Images	Low	31.10 (8.36)	13.53 (4.57)
Study 4	Older	Positive Stereotype Quiz	Low	32.49 (9.08)	13.31 (3.98)
		Positive Stereotype Quiz	High	29.05 (10.14)	14.68 (4.06)
	Older	Negative Stereotype Quiz	Low	31.79 (10.60)	12.79 (5.29)
		Negative Stereotype Quiz	High	27.75 (10.48)	13.97 (4.88)
	Older	No Quiz	Low	29.03 (7.70)	14.39 (3.92)
		No Quiz	High	33.28 (9.07)	13.38 (4.25)

ism occurs when someone is classified as “old” and also judged or treated differently because of that identity (Butler, 1975). To mimic this, in the negative stereotype version, participants were also told that they had been selected to participate in the study because they were an older adult (i.e., an individual aged 50 or older). By making age salient, these participants were aware that the researchers assumed the negative age stereotypes applied to them. Immediately after this, participants completed Carstensen and Lang’s (1996) FTP Scale. Here, participants used a 7-point scale (1 = *very untrue of me* and 7 = *very true of me*) to indicate their agreement with ten questions. As shown by Cate and John (2007), of these, seven assess beliefs about future opportunities (e.g., “*I could do anything I want in the future*”), and three assess beliefs about future limitations (e.g., “*I have the sense time is running out*”). Responses to these two subscales (Focus on Opportunities and Focus on Limitations) were analyzed separately. Although they are interrelated, they have different development trajectories (Cate & John, 2007) and may be differently associated with cognitive and affective processes (see Rohr, John, Fung, & Lang, 2017). There were no missing responses.

Results

We examined the impact of our ageism manipulation by conducting separate single-factor ANCOVAs (Stereotype valence: negative or positive) on the Focus on Opportunities and Focus on Limitations scores. We included the covariates of age and

self-reported health (reported during the prescreening on a 1 = *very poor* to 9 = *excellent scale*), as these are known to be linked to FTP (e.g., Lang & Carstensen, 2002; Kooij & Van De Voorde, 2011). Within both of these analyses, there were main effects of stereotype valence. As shown in Table 1, participants in the negative age stereotype condition perceived their futures as having fewer opportunities, $F(1, 45) = 6.78, p = .012, \eta_p^2 = .131$, and more limitations, $F(1, 45) = 5.37, p = .025, \eta_p^2 = .107$, than did participants in the positive age stereotype condition.

Discussion

In Study 1, older adults randomly assigned to our ageism group rated their futures as having fewer opportunities and more limitations as compared to participants exposed to positive aging stereotypes. In Study 2 we aimed to replicate these findings and test whether they are age-specific. Given that stereotypes about old age are not self-relevant to younger adults, our ageism manipulation should have minimal (or no) effect on the FTP of younger adults (see Kornadt & Rothermund, 2012). This would be similar to other research showing that experimentally priming age stereotypes exerts a larger influence on older adults than it does on younger adults (e.g., Hess, Hinson, & Statham, 2004; Levy, 1996).

In addition, in Study 2 we also tested whether the effects of our ageism manipulation on the FTP of older adults were due to changes in mood; reading the negative aging quiz questions may have invoked a negative mood state, which in turn led

older adults to be pessimistic about future events. This possibility would be consistent with research linking mood to other temporal judgments, such as time perceptions (i.e., estimates about the perceived duration of events) and time orientations (i.e., the relative dominance of the past, present, and future in one's thoughts; Hornik, 1992).

Study 2

In Study 2 we aimed to (1) replicate the Study 1 results in a new sample of older adults, (2) determine whether the effects of our ageism manipulation on FTP are age-specific, and (3) test whether the effects of our ageism manipulation on the FTP of older adults are attributable to changes in mood.

Method

Participants

Participants were recruited from Amazon's MTurk using the two-stage sampling procedure described in Study 1. This yielded 90 older adults (aged 50 or older) and 98 younger adults (aged 18 to 29). Of these, we eliminated 33 from analyses (24 repeat IP addresses and 9 responses from individuals whose IP address was associated with a response from Study 1). This left a final sample of 64 older adult participants (38 females, 26 males) and 91 younger adults (34 females, 57 males). The older adult participants were on average 58.28 years old (range = 50–71). There were 30 older adult participants randomly assigned to the negative age stereotype group and 34 to the positive age stereotype group. Independent t-tests confirmed that the older adults assigned to the two groups did not differ in age or self-reported health ($ps > .25$). The younger adult participants were on average 25.15 years old (range = 18–29). There were 47 younger adult participants randomly assigned to the negative age stereotype group and 44 to the positive age stereotype group. Younger adults assigned to the two groups did not differ in age or self-reported health ($ps > .17$).

Procedure

The procedure was identical to Study 1 with two exceptions. First, in the negative age stereotype condition, the older (but not younger) adult participants were told that they had been selected to participate in the study because they were older. Second, all participants rated their mood at the beginning of the study and then again after completing the Aging Quiz. This was done using a 1 to 100 sliding scale, with endpoints labeled *very negative* and *very positive*. There were no missing responses.

Results

We conducted separate 2 (Age group: older or younger) \times 2 (Stereotype valence: negative or positive) between-subjects ANOVAs on the Focus on Opportunities and Focus on Limitations scores (see Table 1).² Looking first at the Focus on Opportunities subscale, we observed a significant main effect of age group. Older adults saw their futures as having fewer opportunities than did younger adults, $F(1, 151) = 32.80, p < .001, \eta_p^2 = .178$. There was also a marginally significant main effect of our stereotype manipulation, $F(1, 151) = 3.21, p = .075, \eta_p^2 = .021$. However, these main effects were qualified by a significant interaction between age group and stereotype valence, $F(1, 151) = 7.22, p = .008, \eta_p^2 = .046$. To better understand this interaction, we next examined the older and younger adults separately. Looking first at the older adult responses, we replicated the Study 1 results. Within a single factor (Stereotype valence) between-subjects ANCOVA (with the covariates of age and self-reported health), there was a main effect of stereotype valence on Focus on Opportunities scores, $F(1, 60) = 5.17, p = .027, \eta_p^2 = .079$. Older adults in the negative age stereotype condition perceived their futures as having fewer opportunities than did those in the positive age stereotype condition. In contrast, our stereotype manipulation did not affect younger adults' Focus on Opportunities scores. Within a single factor (Stereotype valence) between-subjects ANCOVA on Focus on Opportunities scores, the main effect of stereotype valence was not significant for the younger adult participants ($p = .204$).

We next tested whether similar effects would be observed for scores on the Focus on Limitations subscale. In a 2 (Age group: older or younger) \times 2 (Stereotype valence: negative or positive) between-subjects ANOVA, there was a significant main effect of age group, such that older adults saw their futures as having more limitations than did younger adults, $F(1, 151) = 19.00, p < .001, \eta_p^2 = .112$. Although there was no main effect of stereotype valence ($p = .509$), the interaction between age group and stereotype valence approached significance, $F(1, 151) = 3.50, p = .063, \eta_p^2 = .023$. To better understand this pattern, we next examined the older and younger adults separately. Looking first at the older adult responses, we failed to replicate the Study 1 results. Within a single-factor (Stereotype valence) between-subjects ANCOVA (with the covariates of age and self-reported health), there was no significant main effect of stereotype valence on older adults' Focus on Limitations scores ($p = .194$). Likewise, there was no significant effect when repeating this analysis with the younger adult responses ($p = .175$).

The previous analyses suggest that our stereotype manipulation only affected older adults' Focus on Opportunities scores. We next tested whether this could be explained as arising due to changes in mood. Independent samples t-tests showed that

² Age and self-reported health were not included as covariates in this analysis because the younger and older adults differed on these variables.

older adults assigned to the positive and negative age stereotype conditions did not significantly differ in their baseline mood ratings ($p = .269$). However, after completing the Aging Quiz, participants assigned to the negative age stereotype condition rated their mood significantly lower ($M = 73.33$; on this scale 0 = very negative to 100 = very positive) than did participants assigned to the positive age stereotype condition ($M = 82.00$), $t(62) = 2.03$, $p = .047$, $d = .504$. Post-quiz mood scores in turn mediated the effects of our ageism manipulation on older adults' Focus on Opportunities scores. Using Hayes' (model 4) PROCESS version 3.0 macro for SPSS (Hayes, 2013) we limited our analysis to the older adult participants, used 95% bias-corrected confidence intervals based on 5,000 bootstrapped samples, and included the covariates of age, self-reported health, and baseline mood. Results showed a significant indirect effect of our ageism manipulation on older adults' Focus on Opportunities scores via mood (95% confidence interval: -4.37 to -0.20), which is indicative of mediation.

Discussion

Three key results emerged from Study 2. First, we partially replicated the Study 1 results. Our ageism manipulation affected older adults' Focus on Opportunities scores. Although our ageism manipulation also numerically affected older adults' Focus on Limitations scores, in contrast to Study 1 this effect was not statistically significant. However, it is worth noting that in Study 1 the ageism manipulation also had a numerically larger effect on older adults' Focus on Opportunities scores than on their Focus on Limitations scores. Second, we found that the effects of our ageism manipulation were age-specific, affecting only the older adult participants and not the younger adult participants. Finally, we also found that the effect of our ageism manipulation on older adults' Focus on Opportunities scores was mediated by mood. Older adults exposed to the negative age stereotypes reported being in a less positive mood than those exposed to the positive age stereotypes. This in turn accounted for the difference in Focus on Opportunities scores between these two groups.

Study 3

The goal of Study 3 was to further examine the link between mood and FTP. The results of Study 2 suggest that experiencing ageism can lead older adults to perceive fewer opportunities in their futures, and that this is due to changes in mood. However,

it is unclear whether negative moods that arise for other reasons also affect the FTP of older adults. To test this, we exposed older adults to positive and negative pictures. For some participants the pictures were related to aging stereotypes, but for other participants the pictures were unrelated to aging stereotypes. We assessed how the pictures affected older adults' mood and FTP.

Method

Participants

Participants were recruited from Amazon's MTurk using the two-stage sampling procedure described in Study 1.³ This yielded a sample of 188 older adult participants. From this sample, we eliminated 33 responses (12 repeat IP addresses, 10 whose IP address was associated with a response from either of the prior studies, and 2 whose self-reported year of birth and age did not correspond). This left a sample of 165 older adult participants (110 females, 55 males), who were on average 57.62 years old (range = 50–76, $SD = 5.92$) and who self-reported being in good health ($M = 6.55$, $SD = 1.69$). Participants were randomly assigned to one of four picture conditions: 43 saw positive aging images, 39 saw negative aging images, 43 saw positive nonaging images, and 40 saw negative nonaging images. A single-factor ANOVA showed no differences between the four groups in age or self-reported health ($ps > .23$).

Procedure

Participants first rated their mood using a 1 to 100 sliding scale, with endpoints labeled *very negative* and *very positive*. Next, they viewed a series of 12 pictures. Each picture was shown for 5 seconds. Participants were told that their task was to simply look at the pictures. They were also advised to make sure that they were in a position to not be distracted for at least 1 minute since the picture slideshow could not be paused, advanced, or rewound once it began. The content of the pictures varied across the four picture conditions. In the positive aging condition, the pictures portrayed older adults in line with positive aging stereotypes – they were active and happy individuals engaged in everyday activities such as cooking, reading, and playing cards. In the negative aging condition, the pictures portrayed older adults in line with negative aging stereotypes – they were frail, confused, and despondent. In the negative nonaging condition, the pictures depicted unpleasant scenes, such as a starving dog, polluted landscapes, and moldy fruit. Finally, in the positive nonaging condition, the pictures depicted pleasant scenes, such as baby animals, pristine landscapes, and appetizing food. The majority of the pictures were found via internet searches.⁴ In the negative aging condition, after viewing the pic-

³ In this study, a higher proportion of respondents who completed the prescreening survey indicated being aged 50 or older (i.e., 18.3% in this study) as compared to our prior two studies (6.6% in Study 1 and 11.4% in Study 2). However, this age distribution is comparable to that reported in a prior norming study (i.e., 16.83%; Dupuis, Endicott-Popovsky, & Crossler, 2013).

tures, participants were also told that they had been selected to participate in the study because they were an older adult (i.e., an individual aged 50 or older). As noted earlier, this extra instruction was included since this condition was meant to mimic an experience of ageism, which occurs when people know they are being classified as old and are judged or treated differently because of that label (Butler, 1975). Immediately after viewing the 12 pictures (based upon their assigned experimental condition), participants rated their mood a second time. They then completed Carstensen and Lang's (1996) FTP scale. There were no missing responses.

Results

We first analyzed the effect of our manipulation on mood. In a 2 (Picture valence: negative or positive) \times 2 (Picture content: aging or not) \times 2 (Time of mood assessment: before or after the stereotype manipulation) mixed-factor ANOVA the only significant effects were of picture valence, time of mood assessment, and the interaction between picture valence and time of mood assessment (all $ps < .001$). To decompose this interaction, we next tested for group differences during each of the mood assessments using single factor ANOVAs. At baseline, the four groups did not significantly differ in positive mood ($p = .225$). However, positive mood differed between the four groups after viewing the pictures, $F(3, 161) = 28.87, p < .001, \eta_p^2 = .350$. Tukey post-hoc comparisons showed that participants who viewed negatively-valenced images self-reported themselves to be in a less positive mood than participants who viewed the positively-valenced images (all $ps < .001$). This was true regardless of the picture content. After the picture slideshow, there was no significant difference in mood ($p = .481$) between the participants who viewed the negative aging pictures ($M = 53.79$) and those that viewed the negative nonaging pictures ($M = 60.18$). Likewise, there was no significant difference in mood ($p = .998$) between participants who viewed the positive aging pictures ($M = 85.02$) and those that viewed the positive nonaging pictures ($M = 85.74$). Thus, both the aging and nonaging pictures led to differences in positive mood.

We next analyzed the effect of our manipulation on participants' Focus on Opportunities and Focus on Limitations scores using separate 2 (Picture valence: negative or positive) \times 2 (Picture content: aging or not) between-subjects ANCOVAs (with the covariates of age and self-reported health). Looking first at the Focus on Opportunities scale, we observed a significant main effect of picture valence, $F(1, 159) = 12.50, p = .001, \eta_p^2 = .073$, and a marginally significant main effect of picture con-

tent, $F(1, 159) = 3.81, p = .053, \eta_p^2 = .023$. However, these main effects were qualified by a significant interaction between picture valence and picture content, $F(1, 159) = 7.88, p = .006, \eta_p^2 = .047$. To further examine this interaction, we used single-factor ANCOVAs to test how picture valence affected Focus on Opportunities scores when the pictures were aging versus nonaging related. For the aging-related pictures, we found a significant effect of picture valence, $F(1, 78) = 19.02, p < .001, \eta_p^2 = .196$. As shown in Table 1, when participants saw negative aging pictures, they rated their futures as having fewer opportunities as compared to when they saw the positive aging pictures. This effect was absent for participants who viewed the nonaging pictures ($p = .77$).

A different pattern was observed for the Focus on Limitations scores. Within a 2 (Picture valence: negative or positive) \times 2 (Picture content: aging or not) between-subjects ANCOVA, the only significant effect was Picture valence, $F(1, 159) = 5.78, p = .017, \eta_p^2 = .035$. As shown in Table 1, participants who viewed the negative pictures rated their futures as having more limitations as compared to participants who viewed the positive pictures. There was no significant effect of picture content and no significant interaction between picture valence and picture content ($ps > .15$). However, as can be seen in Table 1, the effect was numerically larger when the picture content was related to aging stereotypes.

Discussion

In Study 3, we found that exposure to images that depicted negative aging stereotypes reduced positive mood and also reduced both Focus on Opportunities and also Focus on Limitation scores for older adults. In contrast, exposure to other types of negative images (unrelated to aging stereotypes) reduced positive mood but exerted inconsistent effects on FTP. Viewing negative images (regardless of their content) was associated with an increased focus on future limitations. However, participants only saw their futures as having fewer opportunities if the negative images depicted age stereotypes. This suggests that mood changes – in and of themselves – may not affect all aspects of FTP.

Study 4

The overarching goal of these studies is to test whether ageism affects the FTP of older adults. Ageism occurs when someone

⁴ Each of the 48 pictures was also rated for valence and arousal by an additional 36 older adult participants ($M_{age} = 57.06$; range = 50–70; 25 females and 11 males). Analyses of these ratings confirmed that the pictures matched their intended valence categories. However, the nonaging pictures were perceived to be more strongly-valenced than the aging pictures (i.e., the positive valence ratings had the following pattern: negative nonaging < negative aging < positive aging < positive nonaging). The negative nonaging pictures were also perceived to be more arousing than the other three picture categories, which did not statistically differ from one another.

is classified as “old” and is therefore subjected to negative ageist stereotypes (Butler, 1975). To mimic this, in the prior studies we told some participants that they had been selected because they were an “older adult,” and we also exposed them to negative aging stereotypes (via a quiz or pictures). We later compared their FTP to participants whose age had not been made salient and who had been exposed to positive aging stereotypes. However, this raises the question of whether these two groups differed in FTP because of the valence of the age stereotypes they were exposed to, the salience of being labeled an “older adult,” or the combination of these factors. Additionally, in the prior studies there was no control condition; all participants were exposed to aging stereotypes. Thus, it is also unclear whether exposure to negative aging stereotypes decreases Focus on Opportunities (and sometimes increases Focus on Limitations), whether exposure to positive stereotypes increases Focus on Opportunities, or whether both effects simultaneously occur. To address these limitations, in Study 4 we systematically manipulated both stereotype valence (participants were either exposed to positive age stereotypes, negative age stereotypes, or no age stereotypes) and also age salience (participants were either told that they had been selected because of their age or not) before they reported their FTP.

Method

Participants

Study 4 consisted of 242 older adults recruited from Amazon’s MTurk and screened for eligibility via the toolkit services from TurkPrime (Litman, Robinson, & Abberbock, 2017). From this sample, we eliminated 39 responses: 31 respondents who either did not report their age or year of birth or who reported an age outside of our specified range, 4 respondents whose self-reported year of birth and age did not correspond, and 4 respondents whose response times indicated they did not seriously complete the study (e.g., finishing in under 1 minute). This left a sample of 203 older adult participants (119 females, 84 males), who were on average 57.51 years old (range = 50–74, $SD = 5.64$) and self-reported being in good health ($M = 6.64$, $SD = 1.69$). Participants were randomly assigned to one of six conditions: 35 to the positive stereotype – low age salience group, 37 to the positive stereotype – high age salience group, 34 to the negative stereotype – low age salience group, 32 to the negative stereotype – high age salience group, 33 to the no stereotype – low age salience group, and 32 to the no stereotype – high age salience group. A single-factor ANOVA showed no differences between the six groups in age or health ($ps > .18$).

Procedure

The procedure was similar to Study 1. To manipulate stereotype valence, participants first completed either the positive aging quiz, the negative aging quiz, or did not complete an aging quiz. We next manipulated age salience; some participants were told

that they had been selected to participate because they were an “older adult” (i.e., someone aged 50 or older) or this was not mentioned. All participants then completed Carstensen and Lang’s (1996) FTP scale. There were no missing responses.

Results

We conducted a 3 (Stereotype valence: negative or positive or none) \times 2 (Age salience: high or low) between-subjects ANCOVA (with the covariates of age and self-reported health) on participants’ Focus on Opportunities scores (see Table 1). Within this analysis, there was no significant main effect of either stereotype valence ($p = .472$) or age salience ($p = .624$). However, the interaction between these factors was marginally significant, $F(1, 195) = 3.04$, $p = .050$, $\eta_p^2 = .030$. To better understand this interaction, we next compared each of the six conditions against one another using Fisher’s Least Significant Difference (LSD) test. Within this analysis, we replicated the pattern reported in the prior studies. Participants in the negative stereotype – high age salience had lower Focus on Opportunities scores than did participants in the positive stereotype – low age salience group ($p = .045$). Only one other pairwise comparison reached statistical significance; participants in the negative stereotype – high age salience also had lower Focus on Opportunities scores than did participants in the no stereotype – high age salience condition ($p = .022$). We also conducted a 2 (Stereotype valence: negative or positive or none) \times 2 (Age salience: high or low) between-subjects ANCOVA (with the covariates of age and self-reported health) on Focus on Limitations scores (see Table 1). Within this analysis, there were no significant effects (all $ps > .36$).

Discussion

In this study we systematically manipulated both stereotype valence and age salience. Replicating the prior studies, we found a difference in Focus on Opportunities scores when comparing (1) older adults exposed to negative age stereotypes whose age was made salient, and (2) older adults exposed to positive age stereotypes whose age was not made salient. However, there was no overall effect of either age salience or stereotype valence on FTP. Surprisingly, this was true even when compared to a true control group: Participants who were not exposed to age stereotypes and whose age was not made salient did not differ in FTP from any of the other groups. This may suggest that older adults who experience ageism (i.e., are classified as old and exposed to negative aging stereotypes) may see their futures as having fewer opportunities, but only when compared to peers who do not yet consider themselves old and also see aging more favorably (i.e., those exposed to positive aging stereotypes). This would be consistent with other research showing that age group identification is also linked to FTP (Weiss & Lange, 2011).

Study 5a and Study 5b

In the prior studies we attempted to experimentally mimic the experience of ageism. To do so, we exposed older adults to negative aging stereotypes and told them they had been selected to participate in the study because of their age. They then reported their FTP. The goal of Study 5a and 5b was to examine whether a similar relationship exists between naturally-occurring experiences with ageism and FTP.

Method

Participants

Study 5a consisted of 90 older adult participants (55 females, 35 males), recruited from Amazon's MTurk. They were screened for eligibility via the full lab panel service from TurkPrime (Litman et al., 2017). Participants were only invited to the study if they had previously indicated that they were at least 59 years of age. Participants in Study 5a were on average 62.60 years old (range = 59–69). Study 5b consisted of 189 older adult participants (138 females, 50 males, 1 intersex) who were recruited via email from pools of individuals who had previously expressed interest in taking part in research studies. Participants in Study 5b were on average 70 years old (range = 60–85).

Procedure

Data came from two larger online surveys that broadly focused on time perceptions, motivational goals, and aging perceptions and experiences. As part of these studies, participants completed measures of ageism and FTP.⁵ To assess personal experiences with ageism, we used Palmore's (2001) Ageism Survey. Here, participants used a 3-point scale (0 = *Never*, 1 = *Once*, and 2 = *More than once*) to indicate the number of times they had ever perceived themselves to be the subject of 20 specific forms of ageism. Sample items include: "Someone assumed I could not hear well because of my age," "I was rejected as unattractive because of my age," and "I was denied employment because of my age." To assess FTP, we again used Carstensen and Lang's (1996) FTP Scale.

Results

In Study 5a, there were no missing responses; all participants answered all questions. In Study 5b, 30 participants (of the 189) had missing responses. We excluded two participants from analyses who had excessive missing responses. For the other

28 we used a mean-imputation method. We next evaluated for outliers in both studies. We excluded three participants (one from Study 5a and two from Study 5b) whose experiences with ageism were more than three standard deviations above their respective sample averages. This left a final sample size of 89 in Study 5a and 187 in Study 5b.

As in prior studies (e.g., Palmore, 2001), the prevalence of perceived ageism was high (see Table 2). In Study 5a, only 4 of the 89 participants (4%) reported zero experiences with ageism. Likewise, in Study 5b, only 6 of the 185 participants (3%) reported never having experienced ageism. In both studies, variability in experienced ageism was also high. In Study 5a, scores of experienced ageism ranged from 0 to 27 ($M = 8.67$, $SD = 5.63$). In Study 5b, scores of experienced ageism ranged from 0 to 28 ($M = 8.33$, $SD = 6.55$).

We next examined whether experiences of ageism related to FTP. In Study 5a, as experiences of ageism increased, older adults' Focus on Opportunities score decreased, $r = -.30$, $p = .004$, and their Focus on Limitations score increased, $r = .37$, $p < .001$. This replicated in Study 5b. Once again, as experiences of ageism increased, older adults' Focus on Opportunities score decreased, $r = -.16$, $p = .03$, and their Focus on Limitations score increased, $r = .16$, $p = .03$. Furthermore, in both studies, the correlations between ageism and FTPs remained statistically significant even after controlling for the participants' chronological age.⁶

Discussion

In Study 5a and 5b, older adults who had experienced ageism saw their futures as having fewer opportunities and more limitations. This is similar to other research showing that perceived age discrimination is related to increased subjective ages among older adults (Stephan, Sutin, & Terracciano, 2015). It is also consistent with our prior experimental work showing that exposure to negative aging stereotypes affects FTP. However, given the correlational design of these studies, there are additional factors that may have also played a role. For example, it is possible that older adults with a limited FTP are predisposed to interpret others' behaviors as ageist, or to remember their own experiences with being treated in line with negative aging stereotypes. It is also possible that other background variables (such as depression) influence both the likelihood of experiencing or perceiving ageism and FTP. Although these factors may also contribute to the relationship, when considered in relation to the prior experimental results in Studies 1 to 4, we conclude that ageism affects FTP in part by activating negative aging stereotypes, making them personally salient, and reducing positive mood.

⁵ Participants in Study 5b also completed the Adolescent Time Inventory (Mello & Worrell, 2007). Analysis of their responses is reported in Mello, Zhang, Barber, Paoloni, Howell, and Worrell (2016).

⁶ Within Study 5b, chronological age was also associated with FTP. As in Cate and John (2007), we found that the focus on opportunities and the focus on limitations had distinct developmental trends. From the age of 60 to 85, there was a significant reduction in the focus on opportunities, $r = -.15$, $p = .044$, but the focus on limitations remained stable, $r = -.02$, $p = .815$.

Table 2. Percent of participants that reported having experienced each type of ageism in Study 5a and Study 5b

	Study 4a			Study 4b		
	Never	Once	Twice or more	Never	Once	Twice or more
Told a joke that pokes fun	15	11	74	12	8	80
Sent a birthday card that pokes fun	33	15	53	24	12	64
Denied employment	63	10	27	85	7	8
Doctor or nurse assumed ailments caused by age	57	17	26	52	16	32
Told me, "You're too old for that."	57	17	26	68	13	19
Ignored or not taken seriously	66	10	24	52	15	33
Patronized or "talked down to"	67	15	18	57	17	26
Treated with less dignity and respect	72	10	18	71	12	17
Rejected as unattractive	78	9	14	78	9	12
Assumed I could not hear well	83	3	13	75	10	15
Assumed I could not understand	84	4	11	75	12	14
Denied promotion	85	7	8	90	6	4
Called an insulting name	83	10	7	81	11	8
Waiter or waitress ignored	88	6	7	84	9	7
Denied a position of leadership	82	12	6	90	7	3
Difficulty getting a loan	94	3	2	92	6	2
Refused rental housing	99	–	1	99	1	–
Denied medical treatment	99	–	1	96	3	1
House vandalized	99	1	–	99	1	–
Victimized by a criminal	98	2	–	96	3	1

General Discussion

The key finding of these studies is that exposure to ageism leads older adults to see their futures as having fewer opportunities. In our first four studies, we experimentally manipulated whether participants were exposed to ageism or not. Participants in our ageism groups were exposed to negative aging stereotypes. They were also told that they had been selected for the study because they were an "older adult." Results consistently showed that this led older adults to see fewer opportunities in their futures. This effect was mediated by mood changes. However, when mood changes arise for reasons unrelated to ageism they do not influence older adults' focus on opportunities. We also identified boundary conditions the relationship between ageism and FTP. The effect of our ageism manipulation was age-specific and did not affect younger adults. We also found that the effects of ageism on FTP were most reliable when examining Focus on Opportunities scores and when the comparison is between (1) older adults exposed to negative age stereotypes whose age is made salient, and (2) older adults exposed to positive age stereotypes whose age is not made salient. Finally, in Study 5a and 5b we showed that a similar relationship exists between older adults' real-world experiences with ageism

and their FTP. When considered together, these results suggest that ageism reduces positive mood and leads older adults to see fewer future opportunities for themselves.

These results build upon those recently reported by Weiss, Job, Mathias, Grah, and Freund (2016, Experiment 3). In their study, younger and older adult participant were prompted to spend time writing about either their personal positive experiences with aging (e.g., their characteristics that have improved with age) or their personal negative experiences with aging (e.g., their abilities that have declined with age). They then reported the extent to which they viewed aging as a modifiable process (i.e., their essentialist aging beliefs) and completed the Lang and Carstensen (2002) FTP scale. Results suggested a marginal main effect of the gain/loss writing manipulation such that participants who wrote about age-related losses had a tendency to have a more constrained FTP (i.e., see their futures as having fewer opportunities and/or more limitations). However, the effect of the writing activity interacted with essentialist aging beliefs. Writing about losses only affected FTP for people who had high essentialist beliefs about aging. Similar to this, in the current studies exposing older adults to negative age-related stereotypes (which were often loss-related) affected their FTP in a similar manner. Although we did not assess essentialist beliefs, we document that the effect of negative age-related ste-

reotypes on FTP are particularly pronounced when examining the focus on opportunities, that the effects are age-specific and mediated by a reduction in positive mood, and that a similar relationship between personally-experienced ageism and FTP also exists.

These findings are important because they add to our limited understanding of the antecedents of FTP. The vast majority of studies have examined how FTP predicts outcomes, and less is known about the factors that predict FTP. Some research has suggested that FTP is affected by promotion/prevention focus (Zacher & de Lange, 2011), age group identification (Weiss & Lange, 2011), and beliefs about whether or not the aging process is malleable or fixed (Weiss et al., 2016). Adding to this, we show that the psychosocial context also plays a role; older adults who have experienced ageism see their futures as having fewer opportunities.

These findings are also important because the way people see their futures influences their current behaviors. For example, according to socioemotional selectivity theory, goals vary based upon FTP (Carstensen, 2006; Carstensen et al., 1999). When time is perceived as temporally expansive, people pursue goals related to knowledge acquisition. This is logical since new knowledge may prove itself useful when people have a long future life. However, when time is perceived as temporally limited, the acquisition of new knowledge has less utility, and people instead prioritize goals that will maximize their emotional satisfaction (Carstensen, 2006). Supporting this, when people view the future as having limitations and few opportunities they are more likely to prioritize spending time with close others rather than strangers (e.g., Fredrickson & Carstensen, 1990; Fung, Carstensen, & Lutz, 1999), and are more willing to forgive interpersonal transgressions (Allemand, 2008; Cheng & Yim, 2008). However, seeing the future in this way also comes with pitfalls. Older adults who see the future as having more limitations have poorer subjective well-being and less positive affect (Grühn, Sharifian, & Chu, 2016), and also show decreases in well-being over time (Kotter-Grühn & Smith, 2011). People who see the future as having fewer opportunities and/or more limitations also tend to have less success at work (Zacher & Frese, 2009) and are less likely to engage in positive health behaviors (Gellert, Ziegelmann, Lippke, & Schwarzer, 2012). Our results suggest that both the positive and negative outcomes associated with a reduced focus on opportunities may actually be more likely for older adults who have been exposed to negative aging stereotypes (and would be mediated by the changes in FTP that result from exposure to negative aging stereotypes). However, future research is needed to directly test these relationships.

There are also limitations to the current research which need to be addressed in the future. First, these studies all occurred online using predominantly Amazon MTurk participants. However, experiencing ageism in an isolated online environment is likely different from experiencing it in an in-

teractive social context. It is also unclear whether results from older adult MTurk samples generalize to other groups of older adults. Furthermore, in our experimental studies, the older adult sample recruited from MTurk primarily included people in their 50s and 60s. Given that these individuals likely did not self-identify as "old" (e.g., Montepare & Lachman, 1989; Rubin & Berntsen, 2006), it is possible that experiencing ageism is more unexpected, and affects their FTP more strongly. This would be similar to other research showing that aging stereotype threat exerts a greater impact on memory for younger-old adults as compared to older-old adults (e.g., Hess & Hinson, 2006).

A second limitation is that we did not examine whether the effects of exposure to ageism on FTP vary across time. In our experimental studies, the FTP scale always occurred immediately after our manipulation. In our correlational studies, the experiences of ageism occurred at various time points prior to the study, but the recency of these experiences was not assessed.

Third, our manipulation of aging stereotypes did not affect the FTP of younger adults. However, it is worth noting that aging stereotypes may impact the FTP of younger adults in other circumstances. In the current studies, the aging stereotypes used always pertained to old age. However, younger adults can also experience ageism (see Ayalon, 2014), and making salient the negative stereotypes about youth may influence their FTP as well.

A final limitation of note is that we operationalized FTP as the extent to which people see their futures as having opportunities and limitations. Although our results suggest that ageism exerts a more reliable effect on Focus on Opportunities scores than on Focus on Limitations scores, these are only two possible dimensions of FTP. Many researchers have conceptualized FTP as a multidimensional phenomenon, with both cognitive and motivational components (e.g., Lens, 1988; Nurmi, 1991). For example, in a model by Husman and Shell (2008), there are four subdomains of FTP: valence (the importance people place on future goals), connectedness (the cognitive tendency to see how current plans relate to future goals), speed (the sense of how quickly time is passing), and extension (how far ahead people project their future thoughts). It is also possible to examine FTP within particular life domains. For example, people vary in the number of occupational opportunities and limitations they see for themselves (Zacher & Frese, 2009). They can also vary in their global versus health-related FTP (Tasdemir-Ozdes, Strickland-Hughes, Bluck, & Ebner, 2016). Future research is needed to examine which of these aspects of FTP are most strongly affected by ageism.

In summary, the current research provides evidence that ageism is a psychosocial factor that can affect FTP. Across a series of studies, older adults who had been exposed to ageism saw their futures as having fewer opportunities. They also sometimes saw their futures as having more limitations. Thus, individual differences in exposure to ageism can affect older adults' future outlooks.

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Declaration of Conflicts of Interest

The authors declare that no conflicts of interest exist.

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