

Measurement Article

The Ambivalent Ageism Scale: Developing and Validating a Scale to Measure Benevolent and Hostile Ageism

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Abstract

Purpose: Much like sexism, ageism is a multifaceted prejudice; it involves benevolent and hostile attitudes toward older adults. There are many scales designed to measure hostile ageism, yet none dedicated to measuring benevolent ageism. In the current studies, we developed and validated a 13-item measure: the Ambivalent Ageism Scale (AAS).

Design and Methods: We employed four stages of scale development and validation. In Stage 1, we created 41 benevolent ageist items adapted from existing ageism measures. In Stages 2 and 3, we further refined the pool of items through additional testing and factor analysis and retained nine items loading strongly on two factors related to benevolent ageism: cognitive assistance/physical protection and unwanted help. In order to enable researchers to contrast benevolent and hostile attitudes, we then added four hostile ageist items. In Stage 4, we assessed the test–retest reliability of the 13-item scale.

Results: The AAS had good test–retest reliability ($r = .80$) and good internal consistency ($\alpha = .91$). As predicted, the benevolent and hostile ageism subscales differentially predicted attitudes toward older adults: higher scores on the hostile subscale predicted lower competence and warmth ratings, whereas higher scores on the benevolent subscale predicted higher warmth perceptions.

Implications: The AAS is a useful tool for researchers to assess hostile and benevolent ageism. This measure serves as an important first step in designing interventions to reduce the harmful effects of both hostile and benevolent ageism.

Keywords: Measurement, Scale development, Psychometrics, Ageism, Benevolent prejudice

In both the United States and Canada, the proportion of older adults continues to grow, with 25% of Americans (United States Census Bureau, 2012) and 29% of Canadians (Statistics Canada, 2015) now aged 55 years and older. Despite the growth of the older population in both countries, ageism remains neglected as a form of discrimination studied by researchers. For instance, a 2015 Google search of the term “ageism” returned 708,000 results compared with over 20 million results for a search for “sexism” and over 87 million results for a search for “racism.” This limited interest in ageism might be because people perceive ageism as a less severe and less common form of prejudice compared with racism and sexism (Tse, Kang, Chasteen,

& Remedios, 2010). However, people’s perceptions do not accurately reflect the experiences of older adults. Almost all older adults in North America (91% of older adults surveyed from Canada and 85% of older adults from the United States) report having experienced ageism (Palmore, 2004). Approximately half of these older adults report experiences of being patronized (46%), ignored (43.5%), or having been treated as if they were incompetent (35.5%).

Ageism is a complex prejudice involving positive (e.g., perfect grandparent) and negative (e.g., severely impaired) stereotypes of older adults (Hummert, 1990). The stereotype content model (SCM; Fiske, Cuddy, Glick, & Xu, 2002) proposes that stereotypes of older adults involve perceptions of older

adults as warm (a positive trait) but incompetent (a negative trait). This combination of high warmth and low competence leads to paternalistic prejudice. It is important to differentiate between benevolent and positive attitudes and behaviors. Positive attitudes and behaviors toward older adults are not necessarily manifestations of benevolent ageism. However, it is often challenging to differentiate the two. For example, offering your seat to an older adult while on the bus is not necessarily a benevolently ageist action. However, insisting an older adult take the seat you have offered, even after they have refused, implies that their opinion is irrelevant and undermines their ability to make their own decisions. Patronizing behaviors and attitudes may seem benign, and perhaps even helpful, but they are associated with a number of negative outcomes. A classic study of health outcomes of older adults in nursing homes provides evidence of the importance of feelings of self-control and the harm of patronizing or over-accommodating older adults (Langer & Rodin, 1976): older adults who were given more responsibility experienced better health outcomes than those who were given few responsibilities. As well, research that examines the consequences of over-accommodation (a form of patronizing speech) demonstrates the potential harms of patronizing behavior. Over-accommodation is associated with a loss of self-esteem, motivation, confidence, and feelings of control among older adults (Baltes & Wahl, 1996; Hehman & Bugental, 2015; Hess, 2006; Kemper, Othick, Warren, Gubarchuk, & Gehring, 1996).

Ageism can also be expressed hostilely, rather than benevolently, and when ageism is expressed this way it may be more easily recognized (Marti, Bobier, & Baron, 2000). That hostile ageism is more easily recognized might explain why many scales exist to measure individual differences in hostile ageist beliefs (e.g., Braithwaite, Lynd-Stevenson, & Pigram, 1993; Palmore, 2001), but there is currently no scale to measure benevolent ageism. The current paper addresses this gap in the literature and provides a nuanced measure of ageism, capturing both benevolent and hostile ageism, thus enabling researchers to compare the two. Greater precision in capturing benevolently ageist attitudes will help account for patronizing treatment of older adults and may inform interventions to reduce the activation and application of benevolently ageist stereotypes.

The need for a measure that captures both benevolent and hostile ageism is supported by the utility of the conceptually parallel scale measuring attitudes toward women. Both older adults and women experience hostile and benevolent prejudice. The Ambivalent Sexism Inventory (Glick & Fiske, 1996) was designed to measure hostile and benevolent sexism, both of which are important predictors of women's experiences and gender equality across nations (Glick et al., 2000). Thus, measuring both hostile and benevolent prejudice is important to understanding the experiences of a group and to reducing the prejudice they experience. As we noted above, no such scale currently exists to measure benevolent and hostile ageism independently. Indeed, elements of hostility and benevolence appear in some existing scales; however, those

elements are often conflated, causing the differences between them to be obscured. In reality, it is likely that the extent to which people endorse benevolent and hostile ageism differentially affects their perceptions and treatment of older adults. The Behaviors from Intergroup Affect and Stereotypes map (Cuddy, Fiske, & Glick, 2007) proposes that people's behavior results from their stereotypes about group members. That is, group members who are viewed as warm and incompetent experience patronizing prejudice, such as unwanted help (reflected in our conceptualization of benevolent ageism). This manifests in active facilitation (e.g., helping behavior) and passive harm (e.g., neglect and social exclusion). Contemptuous prejudice (reflected in our conceptualization of hostile ageism) is associated with active harm (e.g., verbal abuse) and passive harm (e.g., neglect). Thus, people who are high in benevolent prejudice might be likely to treat older adults in more overtly positive, yet patronizing, ways, whereas those high in hostile ageism might be more likely to treat adults in overtly negative ways. In the current paper, we design the Ambivalent Ageism Scale (AAS) to measure these different elements of ageist attitudes and benevolent and hostile ageism.

Scale Development

The AAS was developed and tested in four stages. In Stage 1, we collected responses to a 41-item version of the scale. In Stages 2 and 3, we refined the measure by collecting responses to a 21-item version (Stage 2) and then to the final 13-item version (Stage 3). At each of these three stages, we conducted exploratory factor analyses to guide item elimination. We then conducted Stage 4 to test the reliability of the scale. Across these stages of scale development, we recruited young and middle-aged participants from two sources, Amazon Mechanical Turk and The University of Toronto. The goal of this project was to create a scale to measure attitudes toward older adults rather than experiences of older adults. Using young (Stage 1) and young and middle-aged (Stage 2) samples was most appropriate for this goal. We note also that our samples were racially diverse, with large proportions of Asian and Caucasian participants. This is reflective of the demographic composition of North America. Although this may raise the question of cross-cultural differences in attitudes toward older adults, recent research (Cuddy et al., 2009) shows that people evaluate older adults similarly, regardless of their country of residence.

Stage 1

Methods

Procedure. Undergraduate students from the University of Toronto were recruited for the first scale administration. The AAS was administered as a filler scale in nine laboratory studies (unrelated to ageist attitudes). Participants completed the AAS among a variety of other unrelated scales, then completed a demographics questionnaire, and were debriefed and compensated with partial course credit.

Participants. Three-hundred and ninety-seven students (67% female) participated: 42.6% identified as White, 31.2% identified as East or South East Asian, 11.8% identified as South Asian, 4.5% identified as Middle Eastern, 4.3% as “other.” The remaining 5.7% of participants identified as Black, Central American, Caribbean, or as from the Pacific Islands. Ages ranged from 16 to 32 years with a mean of 18.91 ($SD = 1.90$).

Measures. Participants completed the 41-item measure of the AAS. We developed the 41 items using themes present in existing measures of ageism (e.g., [Palmore, 2001](#)), themes from benevolent sexism research ([Glick & Fiske, 1996](#)) and themes based on the SCM ([Fiske et al., 2002](#)). All items were measured on a 7-point rating scale (1 = *Strongly Disagree*, 7 = *Strongly Agree*). The scale was designed to measure the benevolent attitudes people have toward older adults. An example benevolent ageism item was, “It is helpful to repeat things to old people because they rarely understand the first time.”

Results

Of the original 41 items, 21 were retained for the second version of the scale. These items were selected based on a number of criteria. Because an exploratory factor analysis revealed eight factors with eigenvalues greater than 1, we did not use factor loadings to guide item elimination at this stage. Instead, we relied on variation, item redundancy, and face validity. First, we examined the means and eliminated items that had extremely low means (a process similar to early stages of item removal from the Ambivalent Sexism Inventory; [Glick & Fiske, 1996](#)). Items with a mean score of less than 2.5 (scale range = 1–7) were eliminated. Following this, we examined items for redundancy and face validity and eliminated 16 items. For example, items like “Old people should be shielded from sad news in the media and reminded to think about the good old days” were removed because on a face level, they seem to be assessing two beliefs that (1) people should be shielded from sad news and 2) they should be reminded of the good old days.

Discussion

Our initial items did not form a clear factor structure, however, we were able to eliminate approximately half of the items based on face validity, range, and redundancy. The 21-items retained for Stage 2 capture the benevolent nature of ageism. In Stage 2, we further refined the AAS to create a concise measure of benevolent ageism.

Stage 2

Methods

Procedure. We recruited participants aged between 18 and 34 years from the United States via Amazon’s Mechanical Turk (MTurk) for the second stage of scale development.

MTurk is an online platform supporting workers and requesters through which workers (participants) complete short tasks for compensation. MTurk is an increasingly popular research tool for psychologists and has been validated in several studies as providing representative samples whose responses do not differ significantly from student samples ([Berinsky, Huber, & Lenz, 2012](#); [Buhrmester, Kwang, & Gosling, 2011](#)). Participants were compensated USD 0.60.

Participants. Responses were collected from 194 participants. The mean age was 26.90 years ($SD = 4.55$; range = 18–34). The majority of participants, 71.10%, were of European descent; 8.25% of participants identified as East or South Asian, 10.31% identified as either Black, Caribbean, Latino/a, or Middle Eastern, and 10.31% identified as another race. There were 84 men (43.30%) and 108 women (55.7%) in the sample. Two participants did not indicate gender.

Measures. Participants completed the 21-item measure of the AAS. The items were measured on a 7-point rating scale (1 = *Strongly Disagree*, 7 = *Strongly Agree*; $\alpha = .92$). Participants also completed a number of measures that were not relevant to the scale development process. Finally, participants completed a demographic questionnaire in which they were asked to indicate their age, race, gender, and education.

Results

We conducted an exploratory factor analysis on the 21-item AAS using Promax rotation and maximum likelihood extraction. Three factors with eigenvalues greater than 1 emerged (see [Table 1](#)). The first factor was composed of eight items that reflected the idea that older adults require cognitive assistance and physical protection (e.g., It is good to speak slowly to old people because it may take them a while to understand things that are said to them). Factor 2 contained nine items that reflected the idea of unwanted help (e.g., Even if they do not ask for help, older people should always be offered help). Factor 3 was composed of four items associated with the idea that older adults should live separately from others (e.g., It’s good for old people to live in nursing homes so that they don’t have to worry about things like finding housing).

When we designed the scale, we included items related to living in nursing homes to reflect the idea that older adults are perceived as vulnerable when living on their own. However, the fact that these items load on their own factor suggests that participants attended to the segregation component (living in nursing homes) rather than the vulnerability component contained in the item (such as not being taken advantage of). This factor seems to reflect segregation rather than benevolent attitudes. Because segregation is well represented in existing ageism measures like the Fraboni Scale of Ageism ([Fraboni, Saltstone, & Hughes, 1990](#)), we eliminated these four items (Items 3, 7, 16, and 18).

Table 1. Items, Factor Loadings, Means and Standard Deviations of the 21-item Ambivalent Ageism Scale

Item	Factor			M	SD
	1	2	3		
1. Because old people are very emotional, people should watch what they say around them.	.29	.32	.06	3.69	1.80
2. Old people appreciate it when people speak to them in language from “their generation” and avoid current slang.	-.10	.58	.11	4.46	1.57
3. It’s good for old people to live in nursing homes so that they don’t have to worry about things like finding housing	-.08	-.07	.93	3.33	1.67
4. Older people should be reminded that some foods may make them sick.	.23	.27	.26	3.86	1.73
5. *Even if they do not ask for help, older people should always be offered help.	-.22	.90	-.03	4.88	1.61
6. It’s good to remind old people to be careful because they may fall and hurt themselves.	.38	.45	-.06	3.99	1.67
7. Old people should live in nursing homes because those who live alone are often victims of crimes.	.30	.01	.50	3.21	1.70
8. *Even if they do not ask for help, old people should be helped with their groceries.	.05	.79	-.14	4.41	1.69
9. *It’s good to tell old people that they are too old to do certain things, otherwise they might get their feelings hurt when they eventually fail.	.71	-.08	.14	2.57	1.62
10. *Even if they want to, old people shouldn’t be allowed to work because they have already paid their debts to society.	.93	-.18	-.09	2.41	1.65
11. *Even if they want to, old people shouldn’t be allowed to work because they are fragile and may get sick.	.94	-.21	-.03	2.39	1.59
12. Older adults need to have complicated things like using a computer explained to them because it would be difficult for them to figure things out on their own.	.35	.33	.16	3.49	1.64
13. *It’s good to speak slowly to old people because it may take them a while to understand things that are said to them.	.70	.18	.003	3.00	1.70
14. Complicated things like medical advice need to be explained to older people.	.19	.47	.10	3.92	1.59
15. *People should shield older adults from sad news because they are easily moved to tears.	.90	-.09	-.005	2.62	1.58
16. It’s good for old people to live in nursing homes so that they don’t have to worry about maintaining their homes.	-.19	.10	.83	3.54	1.70
17. Older adults should be protected.	-.18	.69	-.01	5.01	1.54
18. Old people should live in nursing homes because those who live alone are often taken advantage of by salesmen and telemarketers.	.36	-.14	.57	2.98	1.68
19. Even if they do not ask for help, older people should be helped across the street.	.37	.52	-.03	3.91	1.71
20. *Older people need to be protected from the harsh realities of our present society.	.79	.08	-.14	3.15	1.78
21. *It’s helpful to repeat things to old people because they rarely understand the first time.	.80	.08	-.03	3.10	1.83
Eigenvalues	8.67	2.54	1.67		
% Variance	41.28	12.10	7.95		
M	3.52				
SD	1.10				
Minimum score	1				
Maximum score	7				
N	183				

Note: Exploratory factor analysis with Promax rotation using listwise deletion. Items marked with an asterisk were retained for the third stage of scale development.

The next stage of elimination was based on how well each item loaded onto the emergent factors. Seven items were removed for having factor loadings of less than .6 (Items 1, 2, 4, 6, 12, 14, and 19). Although .6 is a conservative criterion, its use is justified (Matsunaga, 2010), particularly given the sample size of Stage 2 ($N = 194$); higher factor score criteria are advised when using smaller

samples. Item 17 was redundant with other, more specific items relating to older adults’ need for protection. Thus, nine items were retained for the third iteration of the AAS.

Discussion

In the 21-item AAS, we uncovered a three-factor structure. Of these three factors, two were relevant to our focus on

benevolent ageism (Factors 1 and 2) and were retained for the third stage of scale development. Having created a strong set of items to capture the paternalistic attitudes people may hold toward older adults, we introduced several explicitly hostile ageism items so that our scale could be used to measure both components of ageism (benevolent and hostile). We modeled the hostile items on the Ambivalent Sexism Inventory (Glick & Fiske, 1996) adding a total of 4 hostile ageism items for a total of 13 items. The 13-item version of the AAS, with benevolent and hostile items, will provide a useful tool for researchers to examine how these divergent forms of ageism predict additional age-related attitudes and behaviors. To demonstrate the predictive utility of the measure, we recruited a new sample of participants at Stage 3 to validate the revised scale.

Stage 3

Methods

Procedure. Participants were recruited through Mturk in the same manner as in Stage 2. They were compensated USD 0.30 (the lowered pay from Stage 2 reflects the reduced number of questionnaires included in the survey. Participants completed 7 questionnaires in the current study and 13 for Stage 2).

Participants. Our sample consisted of 161 participants. Slightly less than half the participants (41%) were male. The majority of participants identified as White (71.4%); 8.7 identified as “other,” 6.2% identified as Black, 4.3% as East/SouthEast Asian, 2.5% as Latino/a, 1.9% as South Asian, and the remaining 4.9% identified as Middle Eastern, Caribbean, Aboriginal, or as from the Pacific Islands. Participants’ ages ranged from 18 to 57 years, with a mean of 25.02 years ($SD = 6.57$).

Measures. Participants completed the 13-item version of the AAS (see Table 2). This version included 9 benevolent items and 4 hostile items. All items used a 7-point response scale (1 = “Strongly Disagree”, 7 = “Strongly Agree”).

In addition to the AAS, participants completed the 29-item Fraboni Scale of Ageism (FSA; Fraboni et al., 1990). The Fraboni Scale of Ageism has three subscales (Discrimination, Antilocution, & Avoidance). For the purpose of our scale development we were interested in how the Ambivalent Ageism Scale correlates with the FSA, thus, we examined the FSA in its entirety rather than exploring each subscale separately. The FSA had good reliability ($\alpha = .93$; alpha $> .7$ is a common criteria for acceptable reliability; George & Mallery, 2003). All items were measured on a 5-point scale (1 = “Strongly Disagree”, 5 = “Strongly Agree”). Participants also completed the Warmth and Competence Stereotypes scale (Fiske et al., 2002). Warmth was measured with 10 items (e.g., sociable, kind). Competence was also measured with 10 items

(e.g., able, skillful). Participants were asked to what extent each item was descriptive of older adults and responded on a 9-point scale (1 = “Not at all descriptive”, 9 = “Highly descriptive”). Both the warmth ($\alpha = .88$) and competence ($\alpha = .89$) subscales had good reliability. Following this, participants completed a demographics form.

Results

Scale properties. We tested the structure of the 13-item AAS with an exploratory factor analysis using a Promax rotation and maximum likelihood extraction. Three factors had eigenvalues greater than 1 and are displayed in Table 2. We replicated the first two factors that emerged from the 21-item version of the scale during Stage 2 (unwanted help, Factor 1, and cognitive assistance/protection, Factor 3). A new factor emerged consisting of the hostile ageism items we included in this stage (Factor 2). The scale had excellent reliability ($\alpha = .91$).

Because of our a priori theoretical rationale for developing the AAS, we have applied a two-factor approach to our scale validation. That is, given our interest in benevolence and hostility, we collapsed the two benevolent subscales into a single benevolent subscale and took a two-factor approach to our validation of the AAS. The factor loadings from a two-factor solution are presented in parentheses in Table 2. The reliability for the benevolent items was as robust ($\alpha = .89$) as the reliability for the hostile items ($\alpha = .84$). Unsurprisingly, the two subscales were correlated, $r(159) = .62, p < .001$. A positive correlation between hostile and benevolent ageism is expected, given work with ambivalent sexism showing correlations between the hostile and benevolent sexism subscales. The correlation between the benevolent and hostile subscales of the AAS is similar to the correlation between the Hostile and Benevolent subscales of the Ambivalent Sexism Inventory (r s ranging from .37 to .71; Glick & Fiske, 1996), suggesting the subscales, though related to each other, predict unique variance in attitudes and behavior as do the hostile and benevolent sexism scales.

Convergent and discriminant validity. To assess the ability of the AAS to uniquely contribute to the measurement of ageist attitudes, we correlated the full scale, the hostile subscale of the AAS, and the benevolent subscale of the AAS with the Fraboni Scale of Ageism (FSA; Fraboni et al., 1990). The FSA is a well-known ageism scale but not one from which we took inspiration for our own measure, thus it is a good test of the discriminant validity of our measure. Overall, the AAS was highly correlated with the FSA, $r(159) = .65, p < .001$. Our scale includes both hostile and benevolent items; because most of the items in the FSA relate to hostile ageism, it is not unexpected that our scale would correlate with the FSA. However, if the AAS is properly designed, the hostile subscale ought to correlate more strongly than the benevolent subscale with the FSA. The data revealed this expected correlation: the hostile

Table 2. Items, Factor Loadings, Means and Standard Deviations of the 13-item Ambivalent Ageism Scale

Item	Factor			M	SD
	1	2	3		
1. It is good to tell old people that they are too old to do certain things; otherwise they might get their feelings hurt when they eventually fail.	-.12 (.25)	.37 (.41)	.47	2.54	1.61
2. Even if they want to, old people shouldn't be allowed to work because they have already paid their debt to society.	-.12 (.65)	.07 (.12)	.91	1.97	1.28
3. Even if they want to, old people shouldn't be allowed to work because they are fragile and may get sick.	.08 (.83)	-.08 (-.005)	.95	2.14	1.36
4. It is good to speak slowly to old people because it may take them a while to understand things that are said to them.	.68 (.56)	.13 (.17)	.01	2.66	1.51
5. People should shield older adults from sad news because they are easily moved to tears.	.54 (.94)	-.038 (-.008)	.40	1.96	1.28
6. Older people need to be protected from the harsh realities of society.	.62 (.89)	-.02 (-.07)	.27	2.01	1.49
7. It is helpful to repeat things to old people because they rarely understand the first time.	.94 (.67)	.06 (.09)	-.18	2.55	1.48
8. Even though they do not ask for help, older people should always be offered help.	.61 (.36)	-.02 (.07)	-.10	4.28	1.62
9. Even if they do not ask for help, old people should be helped with their groceries.	.60 (.54)	-.13 (-.06)	.07	3.79	1.63
10. Most old people interpret innocent remarks or acts as being ageist.	.06 (.14)	.60 (.63)	.13	2.60	1.45
11. Old people are too easily offended.	-.04 (-.10)	.95 (.94)	-.07	2.67	1.50
12. Old people exaggerate the problems they have at work.	.10 (.04)	.79 (.81)	-.05	2.51	1.50
13. Old people are a drain on the health care system and the economy.	-.08 (-.01)	.59 (.61)	.09	2.34	1.50
Eigenvalues	6.46	1.57	1.12		
% Variance	49.73	12.11	8.58		
M	2.62				
SD	1.02				
Minimum score	1				
Maximum score	5.77				
N	161				

Note: Exploratory factor analysis with Promax rotation using listwise deletion. The range for Item 1 and Item 2 was 1–6; all others had a range of 1–7. Numbers in parentheses are the factor loadings for a two-factor (benevolent and hostile) solution.

subscale of the AAS and FSA correlated at $r(159) = .75$, $p < .001$. The benevolent subscale and the FSA were less strongly correlated, $r(159) = .51$, $p < .001$. Furthermore, the difference between these correlations was significant, $z = -4.97$, $p < .001$ (we tested the difference between these correlations using the online calculator created by Lee & Preacher, 2013). Thus, although both subscales are correlated with the FSA, as expected, the correlation between the hostile subscale of the AAS and the FSA was stronger, and significantly so.

In addition, we reasoned that if the hostile and benevolent subscales predict different types of ageist attitudes, they ought to differentially predict people's stereotypes about older adults just as hostile and benevolent sexism differentially predict people's stereotypes about women (Glick & Fiske, 1996). To test the relative ability of each subscale to predict warmth and competence stereotypes

about older adults, we performed two regression analyses. In each analysis, we entered participants' centered scores on the hostile and benevolent subscales of the AAS and their interaction as predictors. We included the interaction term for benevolent and hostile ageism because people can be high in both forms of ageism or high in only one form or the other. It is important to test how these types of ageist beliefs interact to predict attitudes. In the first regression, we entered competence stereotypes about older adults as the dependent variable; in the second, we entered warmth stereotypes about older adults as the dependent variable (see Table 3). We did not have a priori predictions about demographic predictors such as gender and education. We tested the model with these included and found the same pattern as without. Thus, for parsimony, we present the regression model with only the variables we hypothesized (i.e., hostile and benevolent ageism) would be significant

Table 3. Benevolent and hostile ageism as predictors of competence and warmth perceptions of older adults

	Competence			Warmth		
	<i>B</i>	<i>SE (B)</i>	<i>Beta</i>	<i>B</i>	<i>SE (B)</i>	<i>Beta</i>
Constant	6.02			6.66		
Benevolent ageism	-.11	.093	-.10	.22*	.088	.23*
Hostile ageism	-.44***	.082	-.48***	-.44***	.078	-.53***
Benevolent × Hostile Ageism	.14**	.049	.22**	.006	.046	.010
<i>F(df)</i>	17.37 (3, 157)			11.48 (3, 157)		
<i>R</i> ²	.25***			.18***		

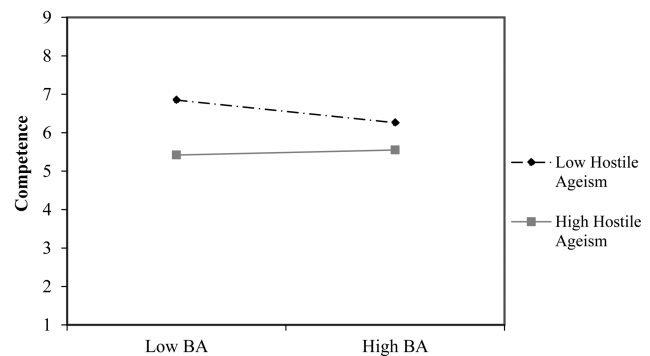
* $p < .05$. ** $p < .01$. *** $p < .001$.

predictors. The significance of hostile and benevolent ageism as predictors of warmth and competence evaluations was tested with a criterion of $p < .05$.

Participants' evaluations of older adults as competent were predicted by their responses on the AAS, $R^2 = .25$, $F(3, 157) = 17.371$, $p < .001$ (see Figure 1). The two subscales (hostile and benevolent) had different predictive abilities. The more participants endorsed hostile ageist beliefs, the less competent they believed older adults to be, $\beta = -.44$, $p < .001$. However, the extent to which participants endorsed benevolent ageist beliefs was unrelated to their evaluations of older adults' competence, $\beta = -.11$, $p = .257$. Hostile and benevolent ageism interacted to predict participants' perceptions of older adults' competence, $\beta = .14$, $p = .005$. Simple slopes tests determined that for participants who were high in hostile ageism, the extent to which they endorsed benevolent ageist beliefs did not influence their perceptions of older adults' competence, $\beta = .06$, $p = .535$. However, for participants low in hostile ageism, benevolent ageism was a significant predictor of their perceptions of older adults such that the more they endorsed benevolently ageist views, the less competent they perceived older adults to be, $\beta = -.27$, $p = .024$. That is, for those low in hostile ageism, benevolent ageism is a significant predictor of their evaluations of older adults as competent, but for those high in hostile ageism, the extent to which they endorse benevolent ageist beliefs is irrelevant to their perceptions of older adults as competent.

Participants' evaluations of older adults as warm were also predicted by their responses to the AAS, $R^2 = .18$, $F(3, 157) = 11.48$, $p < .001$. As with competence, the more strongly participants endorsed hostile ageist beliefs, the less warm they perceived older adults to be, $\beta = -.44$, $p < .001$. The opposite pattern was found for benevolent ageist attitudes: the more participants endorsed benevolent ageist attitudes, the warmer they evaluated older adults to be, $\beta = .22$, $p = .016$. There was no significant interaction between benevolent and hostile ageism, $\beta = .006$, $p = .905$.

Thus, someone who is high in hostile ageist beliefs is likely to perceive older adults as incompetent and cold, regardless of how much they endorse benevolent ageist beliefs. However, someone low in hostile ageism but high in benevolent ageism is likely to view older adults as warm,

**Figure 1.** Benevolent and hostile ageism predicting competence perceptions of older adults.

but incompetent. Although higher perceptions of warmth might seem positive, they can be harmful in motivating paternalistic prejudice toward older adults (Hehman & Bugental, 2015; Hess, 2006). That the two subscales differentially predict warmth and competence perceptions of older adults supports our argument for the necessity of a scale that measures both hostile and benevolent attitudes, as they predict different types of prejudice (contempt versus paternalism; Cuddy et al., 2007).

Stage 4: Test–Retest Reliability

Methods

Procedure. An important quality of a scale is that it measures the same construct each time it is administered, resulting in high test–retest reliability. To determine how our scale performed in this regard, we asked participants to complete the AAS in the lab as part of an unrelated study. We then asked the same participants to complete the AAS a second time, approximately 2 weeks after the initial study. Participants completed the survey for the second time outside of the lab; they were e-mailed a link to the survey and asked to complete it at their convenience.

Participants. Twenty-three participants (15 women) completed the AAS at two time points. The mean age of the sample was 19.30 years ($SD = 3.87$; range 17–36). The majority of participants were East/Southeast Asian ($n = 11$)

or Caucasian ($n = 6$). The remaining participants identified as South American ($n = 3$), South Asian ($n = 2$), and Caribbean ($n = 1$).

Materials. At both times of measurement, participants completed the 13-item AAS as part of a larger survey that also contained filler scales to allay suspicion about the purpose of the second questionnaire.

Results

We correlated participants' overall AAS scores from Time 1 (T1) with their scores at Time 2 (T2), as well as each subscale (hostile and benevolent). The scale showed good test-retest reliability: overall scores at T1 were strongly correlated with scores at T2, $r(21) = .80, p < .001$. Similarly, benevolent ageism at T1 was strongly correlated with benevolent ageism at T2, $r(21) = .76, p < .001$, and hostile ageism at T1 was strongly correlated with hostile ageism at T2, $r(21) = .76, p < .001$.

General Discussion

Much like sexism, ageism is a complex prejudice with elements that are both positive and negative in tone but that may ultimately lead to stereotypes and discrimination. In studying how people's ageist attitudes influence their behaviors, it is important to acknowledge and account for this multifaceted nature of ageism. Our paper is driven by this need. In four stages, we developed and validated a scale to independently measure benevolent and hostile ageism. In the first three stages, we developed a 13-item AAS. Initial scale development was focused on collecting and validating items for the benevolent subscale (Stages 1 and 2). Hostile items were added in Stage 3 to enable researchers to measure both elements of ageism with a single scale. Although factor analyses demonstrate a three-factor solution to our scale, we believe using two subscales (benevolent and hostile) is more informative for research purposes. There may be situations in which it is interesting to parse the effects of believing older adults have cognitive weaknesses and believing that they should be provided with unwanted help (Factors 1 and 3), however, our theoretical rationale for developing this scale was founded in the knowledge that two types of ageism, benevolent and hostile, exist, and are likely to predict responses to older adults. Because of this a priori rationale, we have focused our paper on justifying these two components of this scale.

In Stage 4, we demonstrated the reliability of our scale; the scale has strong test-retest reliability, even when taken in different settings at T1 and T2 (the lab vs. at participants' convenience). Importantly, we demonstrated that hostile and benevolent ageist attitudes do not predict the same outcomes. Although hostile and benevolent ageism were each associated with the use of warmth stereotypes (Stage 3), the observed relationships occurred in opposite

directions. Participants who were high on benevolent ageism were more likely to see older adults as warm, whereas those who were high on hostile ageism were less likely to see older adults as warm. These effects are consistent with the SCM: Groups who are viewed as low in competence and high in warmth tend to experience paternalistic (i.e., benevolent) prejudice, and groups who are viewed as low in competence and low in warmth tend to experience contemptuous (i.e., hostile) prejudice. That participants high in benevolent ageism view older adults as warmer might seem positive. However, given the detrimental effects of patronizing and helping behavior associated with high warmth perceptions of group members (Baltes & Wahl, 1996; Hehman & Bugental, 2015; Hess, 2006; Kemper et al., 1996; for a review see Chasteen & Cary, 2015), it is clear that this behavior can sometimes be as harmful as hostile ageism.

This paper provides support for the idea that ageism has two distinct subtypes, much like sexism (Glick & Fiske, 1996). It also supports the need for a scale to measure these distinct types of ageist attitudes, which we have shown to differentially predict perceptions of older adults (i.e., warmth and competence). However, as with any self-report design, these findings are limited. In future research, it will be important to test the relationship between participant responses on the AAS and their behaviors toward older adults across several domains. For example, it will be important to know whether people who are high on benevolent or hostile ageism make different hiring decisions than those low on these traits. It will also be important to know whether people high in benevolent ageism act in patronizing ways when interacting with older adults. One way to assess this is to use observational data of people's behaviors as well as observer reports from older adults in these interactions. This is a particularly important area for future research. Past research shows that patronizing interactions can create a self-fulfilling prophecy such that older adults internalize beliefs of low self-efficacy and act in line with patronizing stereotypes about older adults (Chasteen, Pichora-Fuller, Dupuis, Smith, & Sing, 2015; Levy, 2009). If people's patronizing behavior can be predicted from the benevolent subscale, it will allow targeted interventions to reduce the associated insidious and harmful behaviors directed toward older adults. This could be particularly important in contexts in which there is blatant discrimination against older adults, like the employment process (Krings, Sczesny, & Kluge, 2011) and for interventions among health care workers who regularly interact with older people.

It would also be interesting to examine the relationship between implicit ageist attitudes and explicit ageist attitudes. We have not tested whether implicit ageist attitudes are similarly structured (with hostile and benevolent factors) like explicit attitudes are. This is an important empirical question. From past work, we know that a mismatch between implicit and explicit attitudes reduces the quality of intergroup

interactions (e.g., Dovidio, Kawakami, & Gaertner, 2002). It might be that interactions with people who are high in implicit benevolent attitudes but low in explicit benevolent attitudes are particularly harmful for older adults because of the subtle negative signals but overt positive signals older adults would receive in interactions with people who have discrepant implicit and explicit attitudes.

The development of a scale that measures both hostile and benevolent ageism is an important first step toward understanding the unique contribution each of these ageist attitudes makes to people's treatment of older adults. We have provided evidence for the reliability and predictive validity of each of these subscales and have demonstrated the importance of measuring both types of ageism when predicting attitudinal outcomes. Thus, this scale will be a useful tool for researchers developing and implementing interventions to reduce ageism toward older adults.

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