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COUNTERACTING AGE STEREOTYPES: A SELF-AWARENESS MANIPULATION

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Abstract

The major goals of the present study were to (a) examine age differences in susceptibility to age stereotypes and (b) test a self-awareness manipulation in counteracting age stereotypes. Young and older adults read two sets of descriptors that only differed in the to-be-ignored age-related information. In the high self-awareness condition, participants saw themselves via a computer video camera. In the low self-awareness condition, they saw prerecorded images of a stranger. Overall, older adults were more likely than young adults to make age-stereotypical judgments in the low self-awareness condition. No age differences were found in the high self-awareness condition.

Contrary to popular belief, stereotypes are not always invalid or malicious. Instead, they represent organized, prior knowledge structures that facilitate interpretation of new information (Fiske & Taylor, 1991). In the absence of other information, stereotypes guide our beliefs. Our expectations about other people, for instance, the way that they will behave or the characteristics they possess, often begin from stereotypes. For example, in a conversation with an older adult, one may be selective in recommending a movie, believing that the older, stereotypically conservative individual may not appreciate the use of curse words or graphic scenes in certain movies (Chen, 2007; Chen & Wang, 2005). The application of stereotypes can save people a lot of time and energy in interpersonal situations where a quick response is needed (Fiske & Neuberg, 1990). While a timesaver, the consequences of using stereotypes can be negative, depending on the content of our stereotypical beliefs. Sometimes, especially when we do not have enough cognitive resources to think deeply about others, stereotypic thoughts can result in inaccurate perceptions and judgments (Chen & Blanchard-Fields, 2000).

Wilson and Brekke (1994) defined "mental contamination" as "the process whereby a person has an unwanted judgment, emotion, or behavior because of mental processing that is unconscious or uncontrollable" (p. 117). Social psychologists have become increasingly aware of the unwanted biasing effects of stereotypes on social judgments. Although most of us do not want to stereotype others, we are often aware of stereotypes of various groups whether we accept the stereotypes or not (Devine, 1989). It has been demonstrated repeatedly that stereotypes can be activated outside our conscious awareness and influence processing social information in unwanted ways (Greenwald & Banaji, 1995; Hamilton & Sherman, 1994). Subsequently, the automatic activation of stereotypes can influence our social judgments as well as our behaviors (Bargh, Chen, & Barrows, 1996; Bargh & Williams, 2006; Ferguson & Bargh, 2004), often in a way not intended. For example, when you give technical instructions to a 70-year-old man, you may automatically use patronizing

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messages or slower and louder speech assuming that, given his age, it would be difficult for him to hear and understand your instructions (Thimm, Rademacher, & Kruse, 1998).

AGE DIFFERENCES IN SUSCEPTIBILITY TO AGE STEREOTYPES

Age stereotyping is one example of unwanted thoughts. The view that old age is negative is pervasive in our society. For example, Perdue and Gurtman (1990) found that subliminal presentation of the word "old" facilitated the decision that a subsequently presented word was negative, whereas subliminal presentation of the word "young" facilitated the decision that a subsequently presented word was positive. This was consistent with the findings that stereotypes of old adults are mostly negative in the Western societies (Cai, Giles, & Noels, 1998; Kite & Johnson, 1988). Often, older adults are viewed as being less competent and having poorer cognitive abilities than younger adults (see Kwong See & Ryan, 1999, for a review). Bargh et al. (1996) also demonstrated the powerful influence of age stereotypes on individuals' behaviors. A group of young adults were primed with stereotypes of old adults. These young adults walked more slowly down the hallway when leaving the experiment than did the control participants. The age stereotypes had activated a behavior characteristic of slowness, a quality closely associated with old adults.

Old adults themselves are not immune to using age stereotypes. As a matter of fact, they may be more susceptible than young adults to the automatic biasing effects of age stereotypes. This is because of their reduced cognitive resources (Salthouse, 1991) and increased difficulty in inhibiting irrelevant thoughts (Hasher & Zacks, 1988). Literature on social cognition and aging (Chen, 2002, 2004, 2007; Chen & Blanchard-Fields, 2000) suggests that old adults are more susceptible than young adults to automatic mental processing. For example, Hess and his colleagues (Hess, McGee, Woodburn, & Bolstad, 1998) found that older adults were more likely than young adults to form impressions that were biased toward primed trait constructs. Using an eyewitness testimony paradigm, Cohen and Faulkner (1989) found that older adults were more often misled by false information than young adults; and they were more confident that their erroneous responses were correct. Finally, Chen and Blanchard-Fields (2000) found that older adults considered the target criminals more dangerous than young adults when reading exacerbating false information about the target criminals.

Based on previous evidence, it is reasonable to predict that older adults would be more susceptible than young adults to the automatic biasing effects of age stereotypes. Levy (1996) found support for this hypothesis. She primed young and old adults with both positive and negative stereotypes of old adults. It was found that the memory performance of older adults, as opposed to the memory performance of young adults, was reliably influenced by the valence (either positive or negative) of subliminally presented stereotypes of old adults. She argued that stereotypes would only affect memory performance when they were relevant to participants (i.e., stereotypes of old adults would only be relevant to older adults). Similarly, Lineweaver, Berger, and Hertzog (2009) found that older adults were more influenced by positive and negative stereotypes when rating a target person's memory decline. They rated more memory decline in those described with negative stereotypes than those described with positive stereotypes, especially when the stereotype was directly relevant to memory decline.

However, these studies only tested the automatic biasing effects of stereotypes of old adults on memory performance. To test whether similar effects could be extended to a context of social judgments, the present study modified Schul's (1993) belief-perseverance paradigm to examine age differences in susceptibility to the automatic biasing effects of age stereotypes

The present study presented young and older participants two sets of descriptors about a target person. Each set had to-be-used descriptors printed in black and to-be-ignored descriptors printed in red. The to-be-used descriptors were exactly the same. However, one set of to-be-ignored descriptors described a 23-year-old male college student (i.e., the young set), and the other set of to-be-ignored descriptors described a 70-year-old retired man (i.e., the old set). All participants then made several social judgments about the target person. Some of the social judgments targeted stereotypes of old adults. Others targeted stereotypes of young adults. Because age stereotypes can be activated outside our conscious awareness (Greenwald & Banaji, 1995), it was assumed that the age stereotypes would be activated despite the explicit instruction to ignore the age-related information printed in red. Based on the cognitive aging theory that older adults have less cognitive resources and more difficulty in inhibiting irrelevant information than young adults (Hasher & Zacks, 1988; Salthouse, 1991), it was expected that older adults would be more susceptible than young adults to the automatic biasing effects of relevant age stereotypes on their social judgments.

COUNTERACTING THE AUTOMATIC BIASING EFFECTS OF AGE STEREOTYPES

Bargh (1997) has proposed that the only way one can begin to control automatic biasing effects on behavior or cognition is first to be aware of it. Indeed, not only social psychologists, but also the general public, have demonstrated an increased awareness of this issue. The election of Barack Obama as the President of United States has been viewed by many Americans as a triumph of overcoming racial stereotypes. Thus, one strategy used to counteract the automatic biasing effects of stereotypes is the active suppression of the stereotypes once they occur. However, research on ironic processes of mental control (Wegner, 1994) suggests that conscious efforts at suppressing thoughts or behavior may not always be effective, especially when perceivers are under high cognitive load or when their cognitive resources are limited (Najmi & Wegner, 2008). In fact, the conscious intentions to suppress a certain thought or behavior may ironically lead to the exact opposite: making the unwanted thought or behavior more accessible. Another way to counteract the automatic biasing effects of stereotypes may be through discounting the activated stereotypical information. However, it is hard to know the exact magnitude of the influence of stereotypes on social judgments (Wilson & Brekke, 1994). Thus, discounting or correction may sometimes lead to overcorrection (Chen & Blanchard-Fields, 2000). A more ambitious means of mental control is for the perceivers to prevent stereotypic thoughts from entering into their deliberation by using a self-awareness manipulation (Wicklund, 1979).

Past research on self-regulation has shown that when the self is the focus of attention, perceivers are especially likely to behave according to their internalized standards and norms (Carver & Scheier, 1978, 1981). Batson, Thompson, Seuferling, Whitney, and Strongman (1999) used a mirror placed in front of participants to study moral hypocrisy. Participants flipped a coin to determine the assignment of themselves and another participant to a positive task condition in which correct responses would earn raffle tickets for a prize. The participants who saw themselves in the mirror eliminated moral hypocrisy in judgments by assigning other participants, rather than themselves, to the positive condition. Participants who did not see themselves in the mirror made assignments in the opposite manner.

Based on the self-awareness theory, Macrae, Bodenhausen, and Milne (1998) manipulated the levels of self-awareness by showing either the images of the participant (the high self-awareness condition) or the images of a stranger (the low self-awareness condition) on a television monitor located in front of the participant. The advantage of this procedure was to produce equivalently distracting stimulation in both conditions, instead of presence of a mirror in one condition but absence of a mirror in the other. It was found that participants who were induced to experience heightened self-awareness produce less stereotypic descriptions of social targets than those who experienced low self-awareness.

The present study employed a similar self-awareness manipulation to counteract the automatic biasing effects of age stereotypes on social judgments. Instead of using a TV monitor, the present study used a computer monitor. Participants who were randomly assigned to the high self-awareness condition saw their self-images on the monitor through a digital video camera located on the top of the computer monitor. Those who were in the low-self-awareness condition saw images of a stranger on the computer monitor (the images were pre-recorded and replayed by the experimenter). It was predicted that heightened self-awareness would reduce the influence of age stereotypes on social judgments for both young and older adults.

METHOD

Participants

One hundred and twenty-nine young and old adults participated in this study. Young adults were recruited from a large Midwestern university. Older adults were recruited via newspaper advertisements and community services (e.g., university alumni and area senior centers). Participants consisted of 64 young adults (35 women) between the ages of 18 and 24 years (M = 19.19, SD = 1.19), and 65 older adults (52 women) between the ages of 61 and 89 years (M = 77.18, SD = 6.79). All participants were community dwelling and primarily Caucasian (91%).

Young and older participants were randomly assigned to one of the two self-awareness conditions: 32 young adults (18 women) and 33 older adults (26 women) in the high self-awareness condition, and 32 young adults (17 women) and 32 older adults (26 women) in the low self-awareness condition. About half of the participants read the set of young stereotypes, and the other half read the set of old stereotypes: 35 young adults (20 women) and 30 older adults (26 women) read young stereotypes, 29 young adults (15 women) and 35 older adults (29 women) read old stereotypes.

A demographic and medical questionnaire including a self-rated health scale (1 = poor, 2 = fair, 3 = good, and 4 = excellent) was administered at the beginning of the experiment. Vocabulary was assessed by the vocabulary subtest of the Shipley Institute of Living Scale (Shipley, 1940). A 2 (age group: young vs. old participants) × 2 (age stereotypes: young vs. old stereotypes) × 2 (self-awareness condition: high vs. low) ANOVA was conducted on educational level, self-rated health, and vocabulary. There were no group differences in education level. However, the main effects of age group were significant for health (F(1, 121) = 36.60, MSE = .46, p < .001) and vocabulary (F(1,121) = 10.13, MSE = 21.32, p < .01). Older adults scored higher than young adults on vocabulary (M = 30.90, SD = 5.56 for old adults, and M = 28.34, SD = 3.45 for young adults), but rated themselves lower on self-rated health (M = 2.63, SD = .72 for old adults, and M = 3.34, SD = .62 for young adults).

Page 4

NIH-PA Author Manuscript

Tasks and Materials

The Belief Perseverance Paradigm—The current study modified a belief perseverance paradigm (Schul, 1993) to assess age differences in susceptibility to the automatic biasing effects of age stereotypes on social judgments. Participants were given the experimental material in a booklet. Each booklet had two sets of descriptors. The first set of descriptors was about a person named Ben and was identical for participants in all conditions. Information about Ben appeared in the form of eight descriptors and was printed black. After participants read the descriptors, they were asked to go to the next page for further instructions. Finally, they were asked to make a series of judgments about the target person, Ben (e.g., Is Ben likely to have a college education?). The first story about Ben served as a practice trial.

The second set of descriptors was about a person named Adam. It differed according to experimental conditions. About half of the participants read the young set and the other half read the old set. Participants were instructed as follows:

To make the task a little more challenging, you will read two kinds of descriptors. The descriptors printed in BLACK are the to-be-used information about the target person that has been verified to be true. The descriptors printed in RED are the to-be-ignored information irrelevant to the target person. Please read all the descriptors aloud and try to form an image of the target person based only on the to-be-used descriptors.

There were two versions of the to-be-ignored descriptors. One version, the young set, had Adam as "23 years old" and "a college student." The other version, the old set, had Adam as "70 years old" and "retired." Each version also contained six identical descriptors that were age-irrelevant. After reading the descriptors of Adam, participants were asked to make eight social judgments about Adam. Six of the eight social judgments were relevant to the dimension of age stereotypes (see Schul, 1993). Three social judgments involved characteristics of a young person ("Adam is likely to go on adventurous trips," "Adam is likely to be irresponsible," and "Adam is likely to wait tables in a restaurant on weekends"). The other three social judgments involved characteristics of an old person ("Adam is likely to be wise," "Adam is likely to have trouble hearing," "Adam is likely to be conservative"). The remaining two social judgments were not relevant to the dimension of age stereotypes ("Adam is likely to smoke"). For each judgment, participants were asked to rate how certain they were that the statement fit Adam. The ratings were made on a 9-point Likert-type scale (1 = *certainly no*, 5 = *not sure*, 9 = *certainly yes*).

Self-Awareness Manipulation—Self-awareness was manipulated by showing either the self-image of each participant or an image of a stranger on a computer monitor located in front of the participant. In the high self-awareness condition, participants could see their self-images on the computer screen through a digital video camera located on the top of the monitor. In the low self-awareness condition, participants saw prerecorded images of a stranger on the computer screen. After reading the descriptors, all participants proceeded to the next page and made a series of social judgments about Adam.

Design and Procedure

The study employed a 2 (self-awareness condition: high vs. low) \times 2 (age group: young vs. old) \times 2 (age stereotype: young vs. old) between-subject design. Each participant was seated in front of a computer and tested alone. All participants were told that the experiment would explore their abilities to make social judgments under distraction. The booklet had several parts and specific instructions were given prior to each part. Participants were asked to read

the instructions carefully because they could not turn the pages back at any time. Immediately afterwards, they read eight descriptors about Ben. They were instructed to read all eight descriptors out loud and make eight social judgments about Ben. Participants in the high self-awareness condition saw their self-images on the computer screen through a digital video camera sitting on top of the monitor. Participants in the low self-awareness condition saw the images of a stranger on the computer screen.

Participants then proceeded to the second set of descriptors. Half of the participants read the young set and the other half read the old set. Participants were told to read all the descriptors aloud and form an image of Adam based only on the to-be-used descriptors. Afterwards, they proceeded to make the eight judgments about Adam. Finally, all participants were fully debriefed and thanked for their participation.

RESULTS

Preliminary Analysis

A correlation analysis was performed to test the intercorrelations among the three ratings involving characteristics of young people and the intercorrelations among the three ratings involving characteristics of old people. The correlation coefficients were small for the three ratings targeting stereotypes of young adults (r = .07 between adventurous trips and being irresponsible, r = .18 between adventurous trips and waiting tables, and r = .14 between being irresponsible and waiting tables). The coefficients ranged from small to moderate for the three ratings targeting stereotypes of old adults (r = .19 between being conservative and having trouble hearing, r = .41 between being conservative and being wise, and r = .19 between having trouble hearing and being conservative). Thus, the following analyses were performed separately on each scale.

Age Differences in Susceptibility to Age Stereotypes

In order to examine overall age differences in susceptibility to the automatic biasing effects of age stereotypes on social judgment, a series of 2 (age group: young vs. old) × 2 (age stereotype: young vs. old) ANOVAs were performed on the six ratings that were sensitive to the age stereotypes. Please see Table 1 for means and standard deviations of the six ratings by age group and age stereotype. There was a main effect of age group for all three ratings involving the characteristics of young people: F(1, 121) = 14.51, MSE = 5.14, p < .01 for adventurous trips; F(1, 121) = 8.68, MSE = 6.14, p < .01 for being irresponsible; and F(1, 121) = 15.21, MSE = 4.44, p < .001 for waiting tables. Old participants were less likely to endorse the young stereotypes than were young participants. There was also a main effect of age group for one of the three ratings involving the characteristics of old people: F(1, 121) = 3.83, MSE = 4.46, p < .05 for being conservative. Old participants were more likely to endorse the old stereotype than were young participants.

What was more interesting to our first hypothesis was the interaction effects of age group by age stereotype. Significant Age Group × Age Stereotype interactions were found for two out of three ratings involving stereotypes of old adults: F(1, 121) = 8.75, MSE = 4.46, p < .01 for being conservative and F(1, 121) = 17.28, MSE = 3.40, p < .001 for having trouble hearing. T tests were performed to decompose these interaction effects for each age group. Young adults gave similar ratings regardless of which set of booklets they read. However, old adults tended to rate the target person, Adam, as more conservative when they read the old set than when they read the young set (t(63) = 2.70, p < .01). They also rated Adam as more likely to have trouble hearing when they read the old set than when they read the young set (t(63) = 1.68, p < .05). In other words, compared to young adults, old adults' ratings were reliably influenced by the to-be-ignored age-related information (i.e., Adam

being either young or old). Please see Figure 1 for the interaction effects on being conservative. This pattern of results supported our first hypothesis that older adults were more susceptible than young adults to age-stereotypical information.

Self-Awareness Manipulation in Counteracting Age Stereotypes

In order to examine the effectiveness of self-awareness manipulation in counteracting age stereotypes, a series of 2 (age group: young vs. old) \times 2 (self-awareness condition: high vs. low) ANOVAs were performed on the six ratings that were sensitive to the age stereotypes. Please see Table 2 for means and standard deviations of the six ratings by age stereotype and self-awareness condition. Similar to hypothesis 1, an interaction effect of age stereotype by self-awareness condition supported our second hypothesis. A significant Age Stereotype \times Self-awareness interaction was found for one of the three ratings involving stereotypes of old adults: F(1, 121) = 5.28, MSE = 4.46, p < .05 for being conservative. T tests were then performed to decompose the Age Stereotype × Self-awareness interaction effects for each self-awareness condition. For the high self-awareness condition (i.e., seeing their own images on the computer screen), there were no differences between participants who read the young set and those who read the old set. However, for the low self-awareness condition (i.e., seeing images of a stranger), both young and old adults were more likely to rate the target person, Adam, to be more conservative when they read the old set than when they read the young set (t (62) = 4.70, p < .001). In other words, compared to young and old participants in the high self-awareness condition, the ratings of the participants in the low self-awareness condition were reliably influence by the to-be-ignored age-related information (i.e., Adam being either young or old). Please see Figure 2 for the interaction effect on being conservative. This pattern of results suggested that the self-awareness manipulation was at least partially effective in counteracting the automatic biasing effects of age stereotypes on social judgments.

DISCUSSION

There were two primary goals of this research. The first goal was to examine age differences in susceptibility to the automatic biasing effects of age stereotypes on social judgments. The second goal was to test the self-awareness manipulation in counteracting the automatic biasing effects of age stereotypes on social judgments of both young and old adults. With respect to the two major goals, there were two major findings.

First, compared to young adults, old adults' social judgments were reliably influenced by the to-be-ignored age-related information. In other words, they were more susceptible than young adults to the influences of age stereotypes, especially when the age stereotypes were relevant to themselves. The fact that they were instructed beforehand that they should ignore the age-related information indicated that the resulting effects were contrary to their conscious intentions. The mere exposure to age-related information was powerful enough to activate their age stereotypes automatically and influenced their subsequent social judgments. Notice that these age effects were not significant for the three ratings involving the characteristics of young people and one rating involving a positive trait of old people (i.e., being wise). This may be because the stereotypes of young adults were not relevant to older adults (Levy, 1996). Furthermore, being wise may not be a strong characteristic associated with old adults, given the pervasive negative stereotypes nowadays in the Western cultures (Cai et al., 1998). Our results suggest that the automatic biasing effects of age stereotypes may occur under two conditions: when cognitive resources are limited and when the judgments are relevant. This conclusion is consistent with the social psychological literature (Fiske & Neuberg, 1990). Individuals may adjust their social judgments only when

they are highly motivated (e.g., having personal relevance) and/or when they have sufficient resources to do so (Chen, 2004).

The second major finding was that the self-awareness manipulation was at least partially effective in enhancing self-awareness of young and old adults in order to counteract the automatic biasing effects of age stereotypes on their social judgments. At least for the age-stereotypical judgment of Adam being conservative, both young and old adults in the high self-awareness condition seemed to be quite successful in preventing this specific age stereotype from entering into their deliberation and influencing their subsequent social judgments. According to the self-awareness theory (Wicklund, 1979; Wicklund & Frey, 1980), seeing their self-images on the computer screen may have made young and old adults more aware of the social norms against age stereotypes and, thus, promoted their conformity to the norms.

The reason why the self-awareness manipulation only worked for one out of three ratings involving stereotypes of older adults in this study may have something to do with our dependent measures. Similar to Schul's (1993) study, we used three ratings assumed to reflect stereotypes about young adults (i.e., adventurous trips, being irresponsible, and waiting on tables during weekends) and three ratings assumed to reflect stereotypes about old adults (i.e., being wise, having trouble hearing, and being conservative). Based on the third assumption of the self-awareness theory (Wicklund, 1979), "once self-directed attention comes into play, no matter what the cause, that attention will then gravitate toward whatever feature of the self is most salient, and not to the entire self" (p. 189). Thus, it is possible that being conservative was the most salient feature of our participants' stereotypes of old adults. Future research needs to select more representative age stereotypes of each age group (see Hummert, 1990) in order to better test the effectiveness of self-awareness manipulation in counteracting the automatic biasing effects of age stereotypes.

Practice and Policy Implications

The current study also has important practice and policy implications. Although much offended by negative age stereotypes in their everyday lives, old adults themselves were not immune to the powerful influences of age stereotypes. In fact, old adults may be more susceptible than young adults to the automatic biasing effects of age stereotypes, perhaps due to their reduced cognitive resources (Chen & Blanchard- Fields, 2000). The results of the present study suggest that counteracting age stereotypes is a job involving all Americans, not just young adults. It is not an easy job because sometimes activation of age stereotypes is out of our conscious self-awareness (Greenwald & Banaji, 1995). Nevertheless, enhancing individuals' self-awareness is the first successful step toward controlling the automatic biasing effects of age stereotypes on our thinking and behaviors.

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Chen et al.

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Chen et al.



Figure 1. Age group by age stereotype interaction on "being conservative."

Chen et al.





Table 1

Means and standard deviations for the age group by age stereotype interaction

	Age stereotype	
Age group	Young set	Old set
Young participants:		
Adventurous trips	5.51 (1.99)	5.97 (1.86)
Irresponsible	6.09 (1.93)	5.62 (2.23)
Wait on tables	4.51 (1.92)	4.45 (2.20)
Being wise	5.17 (1.69)	6.21 (1.57)
Trouble hearing	4.80 (1.13)	3.52 (1.70)
Being conservative	4.69 (2.04)	5.31 (1.63)
Old participants:		
Adventurous trips	4.60 (2.59)	3.83 (2.50)
Irresponsible	4.83 (2.94)	4.29 (2.64)
Wait on tables	3.70 (2.22)	2.34 (2.04)
Being wise	5.07 (2.27)	6.29 (1.92)
Trouble hearing	3.90 (1.56)	5.34 (2.54)
Being conservative	4.33 (2.77)	7.14 (1.97)

Note. 1 = certainly no, 5 = not sure, and 9 = certainly yes.

Table 2

Means and standard deviations for the age stereotype by experimental condition interaction

	Age stereotype	
Experimental condition	Young set	Old set
High self-awareness:		
Adventurous trips	5.42 (2.21)	5.13 (2.41)
Irresponsible	5.24 (2.35)	4.81 (2.56)
Wait on tables	4.24 (2.25)	3.09 (2.15)
Being wise	5.27 (1.94)	6.13 (1.84)
Trouble hearing	4.42 (1.35)	4.69 (2.15)
Being conservative	4.91 (2.31)	5.91 (2.07)
Low self-awareness:		
Adventurous trips	4.75 (2.41)	4.47 (2.51)
Irresponsible	5.78 (2.67)	4.97 (2.55)
Wait on tables	4.03 (1.93)	3.50 (2.55)
Being wise	4.97 (2.01)	6.37 (1.68)
Trouble hearing	4.34 (1.49)	4.34 (2.60)
Being conservative	4.12 (2.45)	6.72 (1.94)

Note. 1 = certainly no, 5 = not sure, and 9 = certainly yes.