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# The Effects of Age, Hearing Loss, and Communication Difficulty on First Impressions

Ellen Bouchard Ryan, Ann P. Anas, & Melissa Vuckovich

*Within a person perception paradigm, young adults ( $n = 171$ ) evaluated young and older targets with or without hearing loss or communication problems. On anticipated cognitive performance, older targets were rated lower on visual memory and visuospatial skill but higher on wisdom. Targets with normal hearing and communication difficulty were rated as least competent on the cognitive tasks and most socially distant. Furthermore, the lowest wisdom scores were anticipated for normally hearing young targets exhibiting communication problems. The findings showed that adults of any age were judged less severely for communication difficulties if known to use a hearing aid.*

*Keywords:* Aging; Age-based stereotypes; Communication; Disability; Hearing loss; Person perception

According to the Communication Predicament Models of Aging and Disability, age biases and disability stereotypes can increase the likelihood that older adults and those with disabilities receive inappropriate communication from conversational partners, thereby constraining opportunities for satisfactory communication and the achievement of personal goals (Hummert, Garstka, Ryan, & Bonnesen, 2004; Ryan, Bajorek, Beaman, & Anas, 2005). Age and disability cues can be derived from information provided by others (e.g., age on patient lists), physical traits (e.g., wrinkles or stooped back), assistive devices (e.g., hearing aid or walker), behaviors (e.g.,

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forgetting or not hearing), and settings (e.g., long-term care). These negative feedback loop models highlight the potential of such communication predicaments to lead eventually to a withdrawal from valued activities, loss of self-esteem, and decreased sense of control. These consequences underline the importance of understanding how age and disability information guides the formation of “disabling” first impressions.

Old age has typically been associated with lower competence, independence, health, and vitality, but more benevolence and wisdom (Harwood et al., 1996, 2001; Nelson, 2002, 2005). Person perception studies in which hypothetical target persons are evaluated on the basis of a small amount of descriptive information and communication performance have shown that older adults can be penalized both for their age and for receiving age-adapted speech from others (Hummert et al., 2004).

Age-based expectations also lead to differential interpretations of other attributes and behaviors, either leveling the impact of negative information in old age or creating double jeopardy (Palmore, 1999). In the communication domain, some evidence for double jeopardy has been found in person perception studies conducted with young respondents. Older speakers were not accorded the approval received by young speakers for faster, more effective performance (Ryan & Laurie, 1990; Stewart & Ryan, 1982). Ryan, Hummert, and Anas (1997) found that hearing impairment was expected of older speakers and also that older speakers with a known hearing impairment received particularly low anticipated visual memory scores.

The present study used a person perception paradigm to examine age-related disability biases about hearing impairment (Pichora-Fuller & Carson, 2001; Strawbridge, Wallhagen, Shema, & Kaplan, 2000). Young adults gave first impressions of four younger or older target persons, with or without hearing impairment, who did or did not exhibit communication difficulty in a conversation. Four predictions were made.

- H1: Target persons with either attributed hearing loss or observed communication difficulty would be evaluated less positively in terms of anticipated cognitive performance and in social distance.
- H2: Older targets would be assigned lower scores on pro-young cognitive tasks (visual memory, visuospatial skill, and auditory sentence repetition) but higher scores on the pro-old task (wisdom).
- H3: Older targets would be rated as more socially distant.
- H4: The evaluation pattern for older target persons with hearing loss and communication difficulty would be more negative than for young targets (double/triple jeopardy).

## **Method**

Undergraduate psychology students ( $n = 171$ ; 52% female; mean age = 19.4 years) participated in classroom size groups for course credit.

Respondents read vignettes about four hospital volunteer target persons, averaging in age either 35 years or 75 years. To control for cross-sex predictions, we had female participants rate female targets and male participants rate male targets. Across the

four hospital settings, a brief introduction either mentioned the volunteer's gradual loss of hearing and use of a hearing aid or not, and a brief conversational script incorporated a misunderstanding on the part of the volunteer or not (see the Appendix). Four versions of the questionnaire were formed using a modified Latin Square Design to counterbalance the manipulations of hearing and communication abilities across each of the vignettes.

For anticipated cognitive performance, participants estimated how many correct out of 20 items each target would achieve on the following tasks: repetition of sentences over headphones (a manipulation check for hearing), visual memory for objects and for printed names, jigsaw puzzle (visuo-spatial), written vocabulary, and wisdom. Visual memory and visuo-spatial skill were selected to assess negative age expectations and wisdom for positive age expectations. Adapted from Kidwell and Booth (1977) for the volunteer context, social distance was assessed with nine items on seven-point likelihood scales: three moderate (e.g., invite home), three casual (e.g., offer a ride) and three distant (e.g., say hello in passing). Ratings on all social distance items were averaged to form the social distance measure (Cronbach alpha > .85).

## Results and Discussion

A MANOVA was conducted for the cognitive task performance measures. An ANOVA was carried out for the social distance dependent variable. Alpha level for significance was set at .05. Post-hoc comparisons were conducted using t-tests with Bonferroni-type corrections for experiment-wise error.

Respondents expected targets with hearing loss to perform more poorly on the repetition task, but significantly better on visual memory for objects and names and on wisdom, Wilks'  $\Lambda = .58$ ,  $F(6, 164) = 19.90$ ,  $p < .001$ . There was no main effect of hearing ability on social distance ratings. Target persons with communication difficulty were rated as performing worse on all anticipated performance tests, Wilks'  $\Lambda = .55$ ,  $F(6, 164) = 22.63$ ,  $p < .001$ , and as more socially distant  $F(1, 168) = 68.30$ ,  $p < .001$ ,  $\eta^2 = .29$ .

Target age influenced anticipated cognitive performance, Wilks'  $\Lambda = .74$ ,  $F(6, 164) = 9.58$ ,  $p < .001$ . Older target persons predictably received significantly lower scores than young targets on auditory sentence repetition ( $M_{\text{young}} = 8.90$ ,  $M_{\text{old}} = 7.48$ ), visual memory for objects ( $M_{\text{young}} = 13.04$ ,  $M_{\text{old}} = 11.45$ ) and names ( $M_{\text{young}} = 12.18$ ,  $M_{\text{old}} = 10.82$ ), and jigsaw solution ( $M_{\text{young}} = 18.43$ ,  $M_{\text{old}} = 17.10$ ), and significantly higher scores on wisdom ( $M_{\text{young}} = 14.14$ ,  $M_{\text{old}} = 15.87$ ). This pattern reflects the literature on negative and positive age stereotypes as well as age group differences typical in cognitive assessments (Cavanaugh & Blanchard-Fields, 2002). There was no target age main effect for social distance.

A complex pattern of interactions was obtained. Target persons with both hearing loss and communication difficulty were the lowest on auditory sentence repetition, the manipulation check,  $F(1, 169) = 7.85$ ,  $p < .01$ ,  $\eta^2 = .04$ . Surprisingly, participants expected that target persons with normal hearing who exhibited communication difficulty would perform most poorly for three objective tasks, visual

**Table 1** Anticipated Cognitive Performance and Social Distance Ratings as a Function of Target Hearing and Communication Abilities\*

Measure/item	Hearing			
	Normal		Impaired	
	Communication normal	Communication impaired	Communication normal	Communication impaired
Anticipated task performance				
Repetition of sentences	11.26 <sup>a</sup> (5.32)	7.92 <sup>b</sup> (5.29)	7.70 <sup>b</sup> (4.74)	5.86 <sup>c</sup> (4.87)
Memory for objects	13.12 <sup>a</sup> (4.20)	10.55 <sup>b</sup> (4.42)	12.96 <sup>a</sup> (4.08)	12.35 <sup>a</sup> (4.16)
Memory for names	12.21 <sup>a</sup> (4.35)	10.19 <sup>b</sup> (4.82)	11.83 <sup>a</sup> (4.00)	11.76 <sup>a</sup> (4.56)
Jigsaw puzzle completion	18.30 <sup>a</sup> (3.52)	17.30 <sup>a</sup> (4.49)	18.00 <sup>a</sup> (3.59)	17.44 <sup>a</sup> (4.13)
Written vocabulary test	16.68 <sup>a</sup> (3.33) <sup>1</sup>	14.26 <sup>b</sup> (4.98)	15.91 <sup>c</sup> (3.83) <sup>1</sup>	14.64 <sup>b</sup> (4.87)
Wisdom	15.53 <sup>a</sup> (3.72)	13.77 <sup>b</sup> (4.90)	15.47 <sup>a</sup> (3.71)	15.28 <sup>a</sup> (4.29)
Social distance	4.13 <sup>a</sup> (1.11)	3.48 <sup>b</sup> (1.11)	3.95 <sup>a</sup> (1.10)	3.79 <sup>a</sup> (1.10)

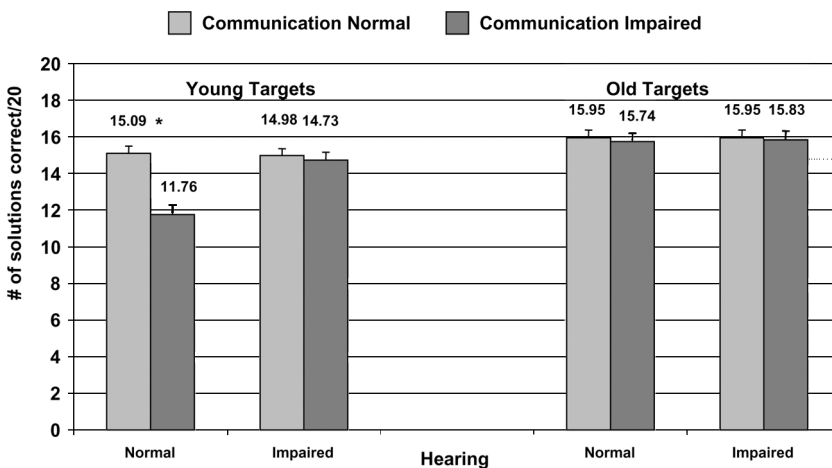
\* Means with different superscripts on the same row are significantly different from each other ( $p < .001$ , except <sup>1</sup>  $p < .01$ ).

object memory,  $F(1, 169) = 19.41, p < .001, \eta^2 = .10$ , visual name memory,  $F(1, 169) = 17.89, p < .001, \eta^2 = .10$ , and written vocabulary,  $F(1, 169) = 6.90, p < .01, \eta^2 = .04$  (see Table 1). As well, these targets were viewed as the most socially distant,  $F(1, 168) = 22.85, p < .001, \eta^2 = .12$ . Clearly, adults of any age are judged more severely for communication difficulties if hearing is assumed to be normal.

The only three-way interaction occurred for anticipated performance on the wisdom task (see Figure 1). The lowest score was for the young target with normal hearing who exhibited communication difficulties,  $F(1, 169) = 12.06, p < .01, \eta^2 = .07$ . On this one measure, the penalty for unexplained communication problems is only assigned to the young person. This leveling shows that young participants presume hearing and communication problems among the old (Nelson, 2002; Ryan, Jin, Anas, & Luh, 2004; Ryan, Kwong See, Meneer, & Trovato, 1992).

In this study with educated young participants about target persons who were volunteering in a hospital, target age did not impact the social distance measure or lead to any double jeopardy effects.

Beyond leveling or double jeopardy in old age, the key interactions here involve known hearing loss as protection from generalized downgrading for impaired communication behavior. From the perceiver's point of view, impaired communication is part of the social schema for a person with hearing impairment, while this behavior provides added (negative) information for the other target (see Fiske & Taylor, 1991). While people with age-related hearing loss typically wait years before acknowledging hearing problems or actually using a hearing aid (Pichora-Fuller & Carson, 2001), this finding shows how the inevitable communication problems can undermine the very self-presentation they are trying to protect. This evaluative pattern highlights the potential benefits adults might experience from disclosing a hearing impairment. The single leveling effect suggests that younger people with a disability might benefit more from disclosure.



**Figure 1** Anticipated Performance on a Test of Wisdom as a Function of Target Age and Communication and Hearing Abilities.

These results raise communication issues for individuals (young and old) with an invisible disability such as hearing loss concerning when and how to disclose impairments that might impede performance on tasks and in social interactions. Future research could productively examine these potential communication predicaments in terms of the self-handicapping, excuse, and assertiveness literature (Higgins, Snyder, & Berglas, 1990; Hummert et al., 2004; Ryan, Anas & Friedman, 2006; Ryan et al., 2005; Snyder & Higgins, 1988). One would expect, for example, that confident, explicit excuses specific to the immediate task would be protective if performance was deficient. The domain-specificity of the effects for anticipated cognitive performance illustrates the potential of these measures for examining complex interactions between target attributes and conversational behaviors (Biernat, 2003).

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## Appendix

### *Introduction to Bonnie Smith/Bobby Smith*

Bonnie Smith, age 34/73 years, lives in Hamilton in her own home. She is well-known in the community and enjoys social functions. (Her hearing ability has declined over the past few years so she now wears a hearing aid.) She has recently learned about gourmet cooking and baking. She enjoys reading popular food magazines for new recipes and special ingredients. Every Sunday morning, she volunteers in the gift shop.

She is speaking with a fellow volunteer:

- Volunteer: Has the new issue of “People” magazine arrived yet?  
 Bonnie: Did you want something?  
 Volunteer: Where is the new “People” magazine?  
 Bonnie: **Communication Impaired:** Some people want a magazine?  
**Communication Normal:** I think they are in the back room.