

# Cognitive Decline and Older Adults' Perception of Stigma Controllability

Anne C. Krendl<sup>1</sup> and George Wolford<sup>2</sup>

<sup>1</sup>Department of Psychological and Brain Sciences, Indiana University, Bloomington.

<sup>2</sup>Department of Psychological and Brain Sciences, Dartmouth College, New Hampshire.

Emerging research suggests that older adults who experience age-related declines in regulatory abilities may have more difficulty inhibiting their expression of negative bias to stigmatized individuals as compared with young adults. However, it remains largely unexplored why this might be. For instance, older adults may hold stigmatized individuals more accountable for their conditions as compared with young adults, which could subsequently increase their expression of negative bias. The current study investigated this question by testing 90 older adults and 44 young adults. Researchers found that older adults with relatively impaired executive function placed a greater emphasis on controllability when evaluating stigmatized individuals and rated the stigmatized conditions overall as being more changeable.

**Key Words:** Social cognition—Aging—Stigma—Controllability—Regulation—Stereotyping.

OLDER adults (OA) hold individuals more accountable when they have undesirable outcomes in social situations (Blanchard-Fields & Norris, 1994), and their propensity to do so is magnified by their personal beliefs (Horhota & Blanchard-Fields, 2006). Intriguingly, emerging research has demonstrated that age-related cognitive decline impairs myriad aspects of OA's everyday lives (Gross, Rebok, Unverzagt, Willis, & Brandt, 2011) and social interactions (Lockenhoff, Cook, Anderson, & Zayas, 2012; Seeman et al., 2011), including their expression of negative bias to outgroup members (Gonsalkorale, Sherman, & Klauer, 2009; Krendl, Heatherton, & Kensinger, 2009; Stewart, von Hippel, & Radvansky, 2009; von Hippel, Silver, & Lynch, 2000). It therefore remains an open question whether OA will hold undesirable stigmatized individuals more accountable for their condition, particularly when OA have experienced a greater extent of regulatory decline. This study examines this question.

It has been widely demonstrated that the manner in which perceivers categorize different stigmatized groups strongly affects their subsequent attitudes toward those groups (Frable, 1993; Jones et al., 1984; Kurzban & Leary, 2001; Rush, 2001; Towler & Schneider, 2005; Weiner, Perry, & Magnusson, 1988). Three categories that have been consistently shown to play a central role in shaping the perceptions of stigmatized individuals are social desirability, pity, and controllability (Deaux, Reid, Mizrahi, & Ethier, 1995; Frable, 1993; Jones et al., 1984; Towler & Schneider, 2005). Importantly, perceived controllability of stigma (how responsible a stigmatized individual is perceived as being for having a stigmatized condition) has been linked to more prejudice (Crandall & Eshleman, 2003; Hegarty & Golden, 2008; Rodin, Price, Sanchez & McElligot, 1989). Thus, because age-related cognitive decline increases the

expression of negative bias and prejudice toward outgroup members (Gonsalkorale, Sherman, & Klauer, 2009; Krendl, Heatherton, & Kensinger, 2009; Stewart, von Hippel, & Radvansky, 2009; von Hippel, Silver, & Lynch, 2000), OA who have experienced more cognitive decline should also have a greater propensity to hold stigmatized individuals accountable for their conditions.

Controllability consists of two critical elements: whether the bearer is perceived as being responsible for how the stigma was acquired or whether the bearer could conceivably shed the stigmatized condition once it is acquired. In many cases, these two elements are mutually exclusive. For instance, an individual could be held accountable for becoming HIV positive (e.g., by sharing drug needles), but would not necessarily be expected to undo his status once acquired. Alternatively, an individual might not be held accountable for becoming depressed, whereas he might be held accountable for not overcoming the depression (e.g., through therapy or medication). It is important to dissociate these two elements of controllability because the subsequent attitudes toward the stigmatized individual may diverge depending on whether perceptions of controllability rest on the acquisition or perceived changeability of the stigmatized condition.

Researchers had two questions in this study: First, do OA with relatively impaired cognitive capacity hold stigmatized targets more accountable for their condition? Second, if so, was that driven by differences in perceived responsibility for the acquisition of the condition or perceptions of the permanence of condition?

## METHOD

Participants (44 young adults, 90 OA) rated 20 stigma groups on 15 ratings that have been previously shown to

load onto the three primary dimensions used in evaluating stigmatized individuals—controllability, social desirability, and pity (Deaux et al., 1995; Frable, 1993; Jones et al., 1984; Towler & Schneider, 2005). Researchers selected a wide range of 20 different stigma groups (see supplementary material for complete list and for traits used in ratings) and asked participants to rate each stigma group on the 15 different ratings (supplementary material) on a 1–9 scale, where 1 = “strongly disagree”, and 9 = “strongly agree.”

### Cognitive Tasks

OA underwent extensive prescreening prior to enrollment to ensure they did not have a history of any physical ailments (e.g., stroke or untreated high blood pressure) or mental disorders (e.g., depression or anxiety) that may affect their cognitive performance. All participants scored a 26 or above on the Mini-Mental State Exam. Thus, all of the OA who participated in this study were normal functioning.

Although cognitive function declines with age, the rate of this decline is highly variable (e.g., MacDonald, Hultsch, & Dixon, 2011). Thus, in order to assess individual levels of cognitive function, OA completed the Wisconsin Card Sorting Task, FAS word fluency, mental arithmetic from WAIS-R, WMS-R mental control, and WMS-R backward digit span (Glisky, Polster, & Routhieaux, 1995). The scoring procedure followed the methods developed by Glisky and colleagues (1995). Participants in this study were recruited based on their performance on this cognitive battery in a prior testing session. Specifically, a large pool of participants completed the cognitive battery. Those who performed relatively well or relatively poorly on these tasks were recruited to participate in this task (on average these groups were one-fourth a standard deviation above or below the mean). OA who performed relatively poorly on these tasks were classified as low-functioning OA, whereas OA who performed relatively well on these tasks were classified as high-functioning OA.

## RESULTS

### Data Reduction

Researchers first question was whether low-functioning OA relied more on perceived controllability as compared with high-functioning OA when forming their initial impressions of stigmatized targets. In order to do this, researchers averaged each subject’s ratings from the traits that loaded onto each of the three dimensions to create a general “controllability,” “social desirability,” and “pity” rating for each participant and converted these scores to *z*-scores.

### Analysis of Dimensions

Given that each participant only completed half the ratings (in order to minimize fatigue), researchers first evaluated whether there was an effect of ratings group on the

ratings. The analysis of variance (ANOVA) revealed no effect of ratings group. Results revealed no effect of ratings group ( $F < 1$ ), so researchers collapsed across these two groups for subsequent analyses.

Researchers then entered participants’ averaged *z*-score ratings for each dimensions into a 3 (dimension: controllability, undesirability, and pity)  $\times$  3 (group: young adults, high-functioning OA, and low-functioning OA) ANOVA with dimension as a repeated measure. Results revealed a main effect of dimension,  $F(2,124) = 64.14$ ,  $p < .001$  and of group  $F(1,62) = 6.42$ ,  $p < .005$ , but no interaction ( $F < 1$ ).

Subsequent analyses revealed that the effect of dimension emerged because all three groups rated the dimension of pity higher than the dimension of controllability, young adults:  $t(21) = 5.86$ ,  $p < .001$ ; high-functioning OA:  $t(22) = 4.24$ ,  $p < .001$ ; low-functioning OA:  $t(20) = 4.82$ ,  $p < .001$ , and OA rated the dimension of controllability higher than the dimension of social desirability ( $p < .01$  for both), whereas young adults did not differ on these ratings ( $p = .74$ ). See Table 1 for mean ratings for each dimension by age group.

The effect of group emerged for two reasons: due to differences between the young and OA and due to differences between high-functioning OA and low-functioning OA. First, young adults overall rated the dimensions of pity and social desirability higher than high-functioning OA, pity:  $t(43) = 2.73$ ,  $p < .01$ ; social desirability:  $t(87) = 4.71$ ,  $p < .001$ , but did not differ in their ratings for controllability:  $t(87) = 1.00$ ,  $p = .3$ . These findings are suggestive of an overall scaling artifact between the two groups. Indeed, age differences in response bias and sensitivity on scaled responses have been widely documented (for review, see Danziger, 1980).

Researchers primary interest was whether differences emerged between high and low-functioning OA. Indeed, *t* tests demonstrated that low-functioning OA ascribed higher ratings to the controllability dimension as compared with high-functioning OA,  $t(87) = 2.17$ ,  $p < .04$ . Importantly, the two groups did not differ in their ratings on the dimension of pity ( $t < 1$ ) or social desirability,  $t(87) = 1.52$ ,  $p = .13$ , suggesting the differences on the controllability dimension were not due to scaling differences between the two groups (supplementary material).

Table 1. Mean Ratings (Reported as *z*-scores) for Each Age Group for Each Dimension

	Controllability	Social desirability	Pity
Young adults	-.02 (.11)	-.06 (.09)	1.24 (.21)
High-functioning older adults	-.24 (.17)	-.69 (.1)	.49 (.17)
Low-functioning older adults	.26 (.15)	-.46 (.12)	.74 (.22)

Note: Standard error mean reported within parentheses.

### Analysis of Controllability Ratings

The earlier results revealed that low-functioning OA rated stigmatized conditions as being more controllable compared with high-functioning OA and young adults. Next, researchers examined whether these differences were due to discrepancies in the perceived responsibility that high-functioning OA and low-functioning OA ascribed to stigmatized individuals for the onset of their conditions, or to differences in the perceptions of changeability of the stigmatized condition.

To address this question, researchers focused on the ratings for two key items that most directly captured researchers area of interest: how responsible the stigmatized individuals were perceived as being for their conditions, and how likely the stigmatized individuals could change their condition. Researchers examined an effect of group (high or low functioning) for these two dependent variables using Bonferroni-corrected *t* tests ( $\alpha = .0125$ ). Results revealed that the low-functioning OA were more likely than high-functioning OA to indicate that stigmatized individuals could change their conditions ( $M_{\text{Low-functioning OA}} = 5.83$ ,  $SD = 1.15$ ;  $M_{\text{High-functioning OA}} = 4.86$ ,  $SD = 1.25$ ;  $t(43) = 2.70$ ,  $p = .01$ ). However, the two groups did not differ in the perceived responsibility they ascribed to the stigmatized individuals ( $M_{\text{Low-functioning OA}} = 3.50$ ,  $SD = .71$ ;  $M_{\text{High-functioning OA}} = 3.35$ ,  $SD = .94$ ;  $t < 1$ ,  $p = .53$ ). Together these results demonstrate that low-functioning OA did not differ from high-functioning OA in their perceptions of responsibility for the onset of the stigma, but the two groups did differ in their perceptions of changeability for the onset of the stigma.

### DISCUSSION

The results from this study demonstrated that low-functioning OA placed greater emphasis on controllability when evaluating stigmatized individuals as compared with high-functioning OA. Further, researchers found that low-functioning OA indicated that stigmatized individuals were more able to change their condition compared with high-functioning OA, whereas the two groups did not differ in their endorsements of perceived responsibility. Together, these findings suggest that low-functioning OA hold stigmatized individuals more responsible for their condition, perhaps because they view the stigmatized condition as being something that can be changed.

Why might low-functioning OA place greater importance on controllability when evaluating stigmatized individuals? One possibility is, it may be linked to their levels of bias toward stigmatized individuals. That is, low-functioning OA may perceive stigmatized conditions as being relatively controllable and therefore express more bias toward stigmatized individuals as a result of this perception. Indeed, it has been widely demonstrated that prejudiced people are more likely to attribute stigmatized traits to controllable causes (Crandall & Eshleman, 2003; Hegarty & Golden, 2008;

Rodin et al., 1989). Simply put, increased bias is linked to a greater propensity to make attributions of controllability (e.g., Hegarty & Golden, 2008).

An intriguing result that emerged in this study was that low-functioning OA rated all stigmatized conditions as being more changeable compared with high-functioning OA. However, high-functioning OA and low-functioning OA did not differ in their overall ratings of perceived responsibility for the onsets of the stigmatized conditions. This result suggests that age-related cognitive decline does not bias perceptions of controllability surrounding how stigmatized conditions are acquired, but instead may bias perceptions of how changeable and malleable these conditions are. Future research should more closely examine this finding.

The goal of this study was to determine whether low-functioning OA rely more on perceived controllability when forming their initial impressions of stigmatized targets. Researchers results demonstrated that this is the case, and this effect is further bolstered by the fact that low-functioning OA view stigmatized conditions to be more changeable as compared with high-functioning OA. Although these results suggest that low-functioning OA hold stigmatized individuals more accountable for their condition, it remains an open question whether an increased emphasis on accountability has any real impact on low-functioning OA's perceptions of stigmatized individuals. Future research should investigate this question.

### FUNDING

Support for this research was provided by a National Institute of Health Postdoctoral Fellowship (F32AG034039) awarded to ACK.

### SUPPLEMENTARY MATERIAL

Supplementary material can be found at: <http://psychogerontology.oxfordjournals.org/>

### CORRESPONDENCE

Correspondence should be addressed to Anne C. Krendl, Department of Psychological and Brain Sciences, Indiana University, 1101 E. 10th St., Bloomington, IN 47405. E-mail: [akrendl@indiana.edu](mailto:akrendl@indiana.edu).

### REFERENCES

- Blanchard-Fields, F., & Norris, L. (1994). Causal attributions from adolescence through adulthood: Age differences, ego level, and generalized response style. *Aging, Neuropsychology, and Cognition*, *1*, 67–86. doi:10.1080/09289919408251451
- Crandall, C. S., & Eshleman, A. (2003). A justification-suppression model of the expression and experience of prejudice. *Psychological Bulletin*, *27*, 30–37.
- Danzinger, W. L. (1980). Measurements of response bias in aging research. In L. W. Poon (Ed), *Aging in the 1980s: Psychological issues* (pp. 552–557). Washington, DC: American Psychological Association.
- Deaux, K., Reid, A., Mizrahi, K., & Ethier, K. A. (1995). Parameters of social identity. *Journal of Personality and Social Psychology*, *68*, 280–291. doi:10.1037/0022-3514.68.2.280
- Frable, D. E. (1993). Dimensions of marginality: Distinctions among those who are different. *Personality and Social Psychology Bulletin*, *19*, 370–380. doi:10.1177/0146167293194002
- Glisky, E. L., Polster, M. R., & Routhieaux, B. C. (1995). Double dissociation between item and source memory. *Neuropsychology*, *9*, 229–235. doi:10.1037/0894-4105.9.2.229

- Gonsalkorale, K., Sherman, J. W., & Klauer, K. C. (2009). Aging and prejudice: Diminished regulation of automatic race bias among older adults. *Journal of Experimental Social Psychology, 45*, 410–414.
- Gross, A. L., Rebok, G. W., Unverzagt, F. W., Willis, S. L., & Brandt, J. (2011). Cognitive predictors of everyday functioning in older adults: Results from the ACTIVE cognitive intervention trial. *Journal of Gerontology B Series: Psychological Sciences, 66B*, 557–566.
- Hegarty, P. & Golden, A. (2008). Attributional beliefs about the controllability of stigmatized traits: Antecedents or justifications of prejudice? *Journal of Applied Social Psychology, 38*, 1023–1044. doi:10.1111/j.1559-1816.2008.00337.x
- Horhota, M., & Blanchard-Fields, F. (2006). Do beliefs and attributional complexity influence age differences in the correspondence bias? *Social Cognition, 24*, 310–337. doi:10.1521/soco.2006.24.3.310
- Jones, E. E., Farina, A., Hastorf, A. H., Markus, H., Miller, D. T., & Scott, R. A. (1984). *Social stigma: the psychology of marked relationships*. New York: W. H. Freeman & Company.
- Krendl, A.C., Heatherton, T.F., & Kensinger, E.A. (2009). Aging minds twisting attitudes: An fMRI investigation of age differences in inhibiting prejudice. *Psychology and Aging, 24*, 530–541.
- Kurzban, R., & Leary, M. R. (2001). Evolutionary origins of stigmatization: The functions of social exclusion. *Psychological Bulletin, 127*, 187–208. doi:10.1037/0033-2909.127.2.187
- Lockenhoff, C. E., Cook, M. A., Anderson, J. F., & Zayas, V. (2012). Age differences in responses to progressive social exclusion: The role of cognition and socioemotional functioning. *Journal of Gerontology B Series: Psychological Sciences*. Advance online publication. doi:10.1093/geronb/gbs042
- MacDonald, S. W. S., Hultsch, D. F., & Dixon, R. A. (2011). Aging and the shape of cognitive change before death: Terminal decline or terminal drop? *Journal of Gerontology B Series: Psychological Sciences, 66B*, 292–301.
- Rodin, M., Price, J., Sanchez, F., & McElligot, S. (1989). Derogation, exclusions and unfair treatment of persons with social flaws. Controllability of stigma and the attribution of prejudice. *Personality and Social Psychology Bulletin, 15*, 439–451. doi:10.1177/0146167289153013
- Rush, L. L. (2001). Affective reactions to multiple stigmas. *Journal of Social Psychology, 138*, 421–430. doi:10.1080/00224549809600397
- Seeman, T. E., Miller-Martinez, D. M., Merkin, S. S., Lachman, M. E., Tun, P. A., Karlamangla, A. S. (2011). Histories of social engagement and adult cognition: Midlife in the U.S. study. *Journal of Gerontology B Series: Psychological Sciences, 66B*(suppl 1), i141–i152.
- Stewart, B. D., von Hippel, W., & Radvansky, G. A. (2009). Age, race, and implicit prejudice. *Psychological Science, 20*, 164–168.
- Towler, A. J., & Schneider, D. J. (2005). Distinctions among stigmatized groups. *Journal of Applied Social Psychology, 35*, 1–14. doi:10.1111/j.1559-1816.2005.tb02090.x
- von Hippel, W., Silver, L. A., & Lynch, M. E. (2000). Stereotyping against your will: The role of inhibitory ability in stereotyping and prejudice among the elderly. *Personality and Social Psychology Bulletin, 26*, 523–532.
- Weiner, B., Perry, R. P., & Magnusson, J. (1988). An attributional analysis of reactions to stigmas. *Journal of Personality and Social Psychology, 55*, 738–748. doi:10.1037/0022-3514.55.5.738