February 2000

The Suggestibility of Older Witnesses

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Published in *Elders, Crime, and the Criminal Justice System: Myth, Perceptions, and Reality in the 21st Century,* edited by Max B. Rothman, Burton D. Dunlop, and Pamela Entzel, Springer Series on Life Styles and Issues in Aging, New York, Springer, 2000.

Chapter 7

The Suggestibility of Older Witnesses

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Research focusing on the accuracy of older eyewitnesses has primarily addressed their ability to describe details of a crime and their ability to recognize the crime's perpetrator. In general, they tend to perform somewhat worse than younger adults with respect to describing a crime's details, and they are also more likely to make false identifications (Yarmey, 1996; this volume). However, the magnitude of any age difference depends in part on how memory is tested. For example, older witnesses are disadvantaged more on tasks requiring free recall than on those merely requiring recognition of either event details or faces (Bornstein, 1995).

One of the most heavily investigated factors regarding eyewitness memory is the effect of giving witnesses misleading information after an event has occurred (Loftus, 1992). Loftus and her colleagues have demonstrated that participants' reported memory for an event is negatively influenced by false information concerning the event that is suggested to them after the event has taken place (Loftus, Miller, & Burns, 1978). A typical misinformation effect experiment has participants witness some

event, such as an automobile accident (Loftus et al., 1978). In subsequent questioning about the event, misleading information is implied to some participants (e.g., that there was a stop sign rather than a yield sign). When tested on their recognition memory for the event, misled participants are more likely than control participants to identify the picture containing the misleading information. In other words, they are less likely to report what they actually saw, showing a greater tendency to report something that was merely suggested to them afterward.

Are older adult witnesses more suggestible than younger adults? There are reasons to suspect that they would be. The misinformation effect can be explained in terms of "source monitoring," which refers to judgments about the origin, or source, of information, as opposed to remembering the information itself (Johnson, Hashtroudi, & Lindsay, 1993). According to Lindsay and Johnson (1989), the misinformation effect reflects a failure of source monitoring. Specifically, an eyewitness acquires information about an event from two sources: by observing the event itself, and from subsequent suggestion. When witnesses then falsely remember a piece of information as part of the event, rather than as a suggestion, they have committed a source monitoring error (Belli, Lindsay, Gales, & McCarthy, 1994; Lindsay & Johnson, 1989).

The source-monitoring approach is particularly relevant to studying memory in older eyewitnesses because of the effect of aging on this specific type of memory task. Compared to young adults, older persons have difficulty remembering the source of information (e.g., Hashtroudi, Johnson, & Chrosniak, 1989; Schacter, Kaszniak, Kihlstrom, & Valdiserri, 1991). Cohen and Faulkner (1989) applied these findings to an eyewitness situation by showing participants a film of a kidnapping, and then presenting them with a narrative containing misleading details. When tested on their memory of the film, older participants (*M* age = 70) were significantly more likely than younger participants (*M* age = 35) to have been misled by suggestive information that was in the narrative. Loftus, Levidow, and Duensing (1992) also found a tendency for older participants (over age 65) to be more suggestible than younger adults when remembering details of a videotaped crime, which is consistent with older adults' impaired ability to discriminate between different sources of information.

However, a recent study by Coxon and Valentine (1997) suggests that older witnesses may not be at such a disadvantage. They compared

the suggestibility of children (*M* age = 8), young adults (*M* age = 17), and older adults (*M* age = 70). All participants watched a videotape of a kidnapping, following which they answered a number of questions about the video. For half of the participants, four of these questions contained misleading information (e.g., they were asked "Which arm was the kidnapper wearing her watch on?" when she had not actually been wearing a watch). The other (control) participants did not receive any misleading information. All participants were then asked 20 specific questions about the video, four of which assessed whether they accepted the misinformation.

Overall memory performance (i.e., total questions answered correctly) was worse in both older adults and children than in young adults. However, on the questions testing for misinformation acceptance, older participants in the control condition answered an average of 66% of the questions correctly, as opposed to 50% in the misled condition; whereas the figures for the young adults were 77% (control) versus 52% (misled).Not only were the older adults not more suggestible than young adults, but they were actually less suggestible: They were the only age group not to show a statistically significant misinformation effect.

Individual differences in educational attainment and verbal ability among the older adult samples may have contributed to these discrepant findings. Previous research in the cognitive aging literature has demonstrated that the magnitude of age-related deficits in performance on a variety of cognitive tasks tends to be smaller for higher ability older people who are well educated and socially active, relative to their lower ability counterparts (Cherry & LeCompte, 1999; Cherry & Park, 1993). Coxon and Valentine's (1997) participants were relatively highly educated (*M* education = 14 yrs), whereas the participants used by Loftus et al. (1992) were much more diverse (Cohen & Faulkner, 1989, do not provide demographic data on their older group).

The present study compares younger and older adult witnesses' susceptibility to misinformation. Previous research on the misinformation effect has not measured the relationship between the effect and individuals' perceptions of their own memory abilities. Such perceptions, and general knowledge of one's own memory processes, are referred to as "metamemory." In order to examine the relationship between metamemory and the misinformation effect in the present study,

participants also completed a questionnaire that assessed their perception of their memory functioning. Although older persons tend to perceive their memories as being faulty, the correlation between self-assessment of memory abilities and actual memory performance is relatively low (Zelinski, Gilewski, & Thompson, 1980). We therefore predicted that there would be a negligible relationship between participants' self-assessed memory functioning and whether or not they were susceptible to misinformation, for both younger and older adults.

Method

Participants

A total of 80 people participated in the study. There were 40 undergraduates from Louisiana State University (*M* age = 20.3, *SD* = 1.6, *Mdn* = 20.0) and 40 older adults (*M* age = 69.0, SD = 5.3, *Mdn* = 70.0). Of the younger adults, 32 were female and 8 were male; of the older adults, 26 were female and 14 were male. Younger adults participated in the study in exchange for class credit. Older adults were volunteers from the community and were paid $5.00 for their participation.

Participants' education level was classified as high school, some college education, bachelor's degree, or post-graduate education. Nearly all undergraduate participants were in the "some college" category; of the older adults, 87.5% had had some college education, and 65% had at least a bachelor's degree. Thus, the two groups were comparable in terms of education, with the older adults being perhaps slightly better educated on average.

Most participants rated their health (OARS, Duke University, 1975) as good to excellent. Three older adults and two younger adults rated their health as fair; no participants rated their health as poor. The Gardner and Monge (1977) 30-Point Word Familiarity Survey was given as a measure of verbal ability. The older adults' mean verbal score (*M* = 21.18, *SD* = 5.72) was significantly higher than the younger

adults' score (M = 12.53, SD = 3.86), $t(78) = 7.93$, $p < .001$), a typical finding in the cognitive aging literature (e.g., Salthouse, 1988). All participants possessed at least 20/30 corrected binocular acuity, assessed with a standard Snellen eye chart.

Design

Age (young vs. old) was factorially crossed with two information conditions (control vs. misled). Twenty participants were tested in each between-group condition.

Materials and Procedure

Participants were tested in small groups of up to four individuals. During the orientation task, a slide of a woman was presented briefly (5 sec), followed by four questions concerning details of the slide. The witnessed event consisted of 22 slides of an accident in which a pedestrian is hit by a car. The slides were the same as those used by Loftus et al. (1978), and the basic procedure was also very similar. Participants were told to study the slide sequence in preparation for a memory test. The series of slides, presented for three seconds each, depicts a red automobile approaching an intersection at which half of the participants saw a stop sign and half saw a yield sign as the critical slide. The critical slide appeared as the ninth slide. Following this critical slide, the car turns right and then hits a pedestrian as he attempts to cross the street.

Immediately following the slide presentation, participants answered 20 questions concerning details of the events depicted in the slide series. As one of the questions, half of the participants were asked: "Did another car pass the red sports car while it was stopped at the *stop* sign?" The remaining participants were asked: "Did another car pass the red sports car while it was stopped at the *yield* sign?" The participants were randomly assigned to conditions in such a way that half of the participants were exposed to information that was consistent with what they had seen during the slide presentation (the *control* condition), whereas the other half were given information that was inconsistent with what they had seen during the slide presentation (the *misled* condition).

The participants then engaged in a 20-minute filler activity, which consisted of completing a demographic questionnaire and the vocabulary test. Afterward, they completed a forced-choice recognition test containing 10 pairs of slides, in which one slide had previously been presented during the first part of the study while the other slide had not. Each slide pair was presented for 8 seconds and was counterbalanced for left/right side presentation. The critical slide pair (i.e., the intersection with the stop and yield signs) appeared in position 6 for all participants.

Following the forced-choice recognition task, participants completed the Memory Functioning Questionnaire (Gilewski, Zelinski, & Schaie, 1990), a self-assessment measure of metamemory. The MFQ contains 64 items related to memory functioning that are rated on a 7-pt scale (e.g., "How well do you remember things that occurred last month?"). It consists of 4 subtests, measuring the general frequency of forgetting, the seriousness of forgetting in various situations, retrospective functioning (i.e., current compared to prior functioning), and frequency of mnemonics usage.

Results

Analyses of variance were performed on the data using age (young, old) and information condition (control, misled) as independent variables. Accuracy on the critical slide was scored as either 0 (incorrect) or 1 (correct).

Detail Questions

Twenty questions, which did not pertain to participants' susceptibility to misinformation, tapped their overall memory for details in the slides. A main effect of age was obtained for this overall score, $F(1, 76) = 6.57$, $p < .01$. The younger adults ($M = 15.3$, $SD = 1.7$) were more accurate on these questions than the older adults ($M = 14.3$, $SD = 1.8$). No other main effects or interactions were observed, Fs$(1, 76) < 1.35$.

Forced-Choice Recognition Test

A marginal main effect of information condition was found for the overall score on the forced-choice recognition test, $F(1, 76) = 3.33$, $p < .07$, with participants in the control condition answering slightly more questions correctly ($M = 9.05/10$, $SD = 0.88$) than participants in the misled condition ($M = 8.65/10$, $SD = 1.08$). No other main effects or interactions were observed, $F(1, 76) < 1.87$. Critical Slide Recognition Performance on the critical slide is shown in Figure 7.1. There was a main effect of information condition on recognition of the critical slide, $F(1, 76) = 5.29$, $p < .02$. Ninety percent of participants in the control condition were correct on this item, compared to 70% of participants in the misled condition. This finding indicates that we did obtain a misinformation effect across all participants. There was no main effect of age $F(1, 76) = 0.33$, nor was the interaction of age and information condition significant $F(1, 76) = 2.97$.

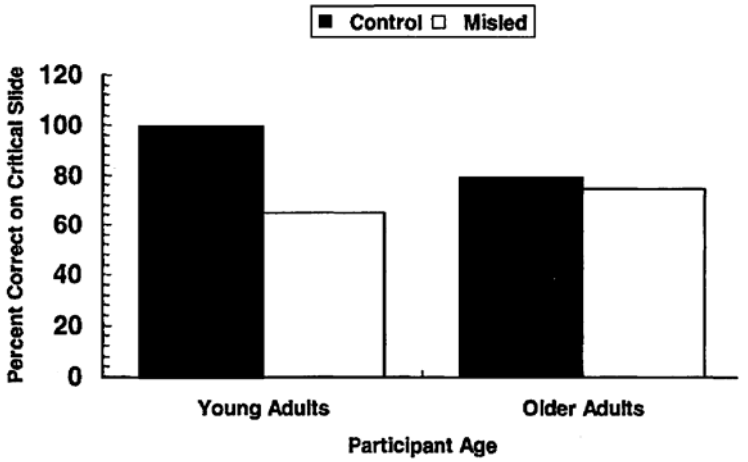

FIGURE 7.1 Percentage of older and younger participants giving the correct answer on the critical (misinformation) slide.

With regard only to the younger adults, a significant difference was found between those in the control condition (100% correct) compared to those in the misled condition (65% correct), $F(1, 38) = 10.23$, $p < .005$. Considering only the older adults, however, this difference was not found. Older adults in the control condition (80% correct) were not significantly more accurate on the critical slide than older adults in the misled condition (75% correct).Thus, a statistically significant misinformation effect was found for the younger but not for the older participants.

Individual Differences and Memory Performance

Education

There was no significant correlation between participants' education level and either their total recognition score, $r = .06$, or their accuracy on the critical slide, $r = .00$. Likewise, neither measure of participants, memory performance was significantly correlated with their verbal ability, rs < .1.

Memory Functioning Questionnaire

Table 7.1 shows the mean MFQ scores for both age groups. A main effect of age was found for the subtest of metamemory questions concerning retrospective functioning, $F(1, 76) = 34.52$, $p < .001$. Younger participants ($M = 23.8$, $SD = 4.1$) scored higher on this subset of questions than the older adults ($M = 17.4$, $SD = 5.5$). There were no age differences for the other three components of the MFQ, $F(1, 76)$s ≤ 1.65.

The four subtests of the metamemory questionnaire were highly intercorrelated. However, the metamemory subtest scores were correlated with neither participants' performance on the detail questions nor their accuracy on the critical slide in the forced-choice recognition test. The first subtest of metamemory questions, concerning the general frequency of forgetting, was correlated with the overall score on the forced-choice recognition test, $r = 0.23$, $p < .05$ for all participants. Broken down by age, this correlation was significant for older, $r = 0.35$, $p < .05$, but not for younger participants.

TABLE 7.1 Mean Scores (and Standard Deviations) on the Four Subtests of the MFQ, As a Function of Participant Age

	Age	
Subtest	Younger adults	Older adults
1. General frequency of forgetting	166.2 (25.0)	163.1 (23.8)
2. Seriousness of forgetting	75.4 (22.8)	80.3 (23.0)
3. Retrospective functioning[a]	23.8 (4.1)	17.4 (5.4)
4. Mnemonics usage	25.5 (9.5)	22.5 (11.0)

Note. The number of items on the different subtests was: 33 on Subtest 1; 18 on Subtest 2; 5 on Subtest 3; and 8 on Subtest 4. For the younger adults, responses on Subtests 1 and 4 were correlated, $r = 0.39$, $p < .01$. For the older adults, responses on Subtest 1 were correlated with responses on Subtest 2, $r = 0.46$, $p < .005$, and on Subtest 4, $r = 0.46$, $p < .005$. Additionally, responses on Subtest 2 were correlated with responses on Subtest 4, $r = 0.34$, $p < .05$, for the older adults.

[a] The difference between older and younger adults on this subtest was statistically significant, $p < .001$.

Discussion and Implications

Despite research showing that aging is associated with source monitoring deficits (Hashtroudi et al., 1989), the effect of misleading suggestions was not greater in older participants than in younger adults. In fact, older witnesses failed to demonstrate a misinformation effect, while the effect was detected in younger witnesses. The absence of a misinformation effect in older participants is largely due to their poorer performance in the control condition (80% correct, vs. 100% for younger participants); yet it was nonetheless the case that older participants in the misled condition actually did somewhat better than their younger counterparts (75% vs. 65% correct).

Although some previous research has found an enhanced misinformation effect in older witnesses (Cohen & Faulkner, 1989; Loftus et al., 1992), the present results are consistent with other research that has failed to find such an effect (Coxon & Valentine, 1997). Older

participants in the present study had high verbal ability and were relatively highly educated, supporting the interpretation that older witnesses with a relatively high level of cognitive functioning appear not to be especially suggestible (cf. Coxon & Valentine, 1997). Although education level was not correlated with participants, eyewitness memory performance, both groups of participants were relatively homogeneous in terms of education. Because cognitive decrements in aging are related to education (Cherry & LeCompte, in press; Cherry & Park, 1993), future research on the suggestibility of older witnesses needs to compare older witnesses who differ in overall ability level. In general, older eyewitnesses—even those with relatively high cognitive functioning—do indeed tend to remember less information than younger witnesses (Coxon & Valentine, 1997). However, there is a lack of conclusive evidence to suggest that age exacerbates the negative influence of various factors on eyewitness memory, such as the presence of a weapon (O'Rourke, Penrod, Cutler, & Stuve, 1989) or misinformation.

Older participants were somewhat more likely to report problems in memory functioning. However, consistent with previous research (e.g., Zelinski et al., 1980), participants' metamemory evaluations were not correlated with their actual performance, in this case whether or not they demonstrated a misinformation effect. This lack of a relationship between memory performance and metamemory was observed for both age groups, though older adults who reported more frequent forgetting did tend to recognize fewer slides correctly. It is important to point out that although the metamemory questionnaire used in the present study covered various aspects of memory functioning, it did not specifically address participants' beliefs about their memory abilities in an eyewitness context. It is possible that those more specific beliefs would differ for older and younger adults, and also that they would correspond to eyewitnesses' actual memory performance. Additional research that addresses this issue is called for.

The present findings have significant implications for how older witnesses should be treated. Jurors—as well as older adults themselves—tend to hold negative stereotypes about older eyewitnesses, encompassing their general abilities both to remember event details and to recognize perpetrators (Bornstein, 1995; Yarmey, this volume). In addition, Ross, Dunning, Toglia, and Ceci (1990, Expt. 3) found that

mock jurors specifically believe older witnesses are more susceptible to misleading information than young adult witnesses. Although there does appear to be a "kernel of truth" in the stereotype concerning older witnesses' ability to describe details of a crime (Yarmey, this volume), the findings of the present study provide no support for the perception that older witnesses-at least those who are highly educated-are also more suggestible than younger witnesses. In evaluating the testimony of eyewitnesses, both jurors and law enforcement officials should attend to the possible influence of post-event information; but they do not need to be more concerned with its effect on older witnesses than with its effect on the adult population at large.

Acknowledgment

We are grateful to Elizabeth Loftus for providing the slides for the experiment.

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