Older Adults Predict More Recollective Experiences Than Younger Adults

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We investigated whether older adults could successfully monitor age-related declines in recollection that are typically found on episodic memory tests. In two experiments, we elicited prospective metacognition judgments based on the remember–know procedure, called Judgments of Remembering and Knowing (JORKs). That is, participants predicted whether word pairs would be remembered (i.e., accompanied by recollective details), known (i.e., have a sense of familiarity devoid of recollective details), or forgotten, on a later test. Compared with actual test performance, older adults were highly overconfident in predicting remembering, whereas younger adults’ predictions more closely corresponded with actual remembering. These data suggest that older adults have difficulties monitoring age-related declines in recollection.

Keywords: aging, metacognition, metamemory, memory, recollection

The ability to predict later memory performance is critical in everyday life. For example, imagine a student studying for an exam. How will the student know when to move on to the next topic or stop studying entirely? Likewise, older adults might need to remember to buy a present for a granddaughter’s birthday or the date of a doctor’s appointment. Some individuals may be confident in their ability to remember these things on their own, whereas others may not have so much trust in their own memory, relying on external memory aids instead. The above examples highlight the importance of successful memory monitoring. That is, both students studying for exams and older adults remembering an appointment seek to successfully anticipate whether something will be remembered in the future. Metacognitive research aims to explore these and related issues (for reviews, see Korniat, 2007; Metcalfe, 2000). Taking a metacognitive approach, the current study investigated age differences in monitoring the likelihood of remembering contextual details associated with an event (i.e., recollection).

For decades, the nature of episodic memory has been heavily debated, with some proposing that a single, unidimensional strength continuum underlies memory, whereas others have advocated a dual-process view composing of recollection and familiarity (see Yonelinas, 2002, for a review). This debate, although important, is beyond the scope of the current study; however, we adopt a dual-process perspective regarding the subjective experiences accompanying remembering. Briefly, such an approach distinguishes between recollection, defined as remembering contextual details associated with an event (e.g., seeing someone in the supermarket and being able to recall the person’s name and how you know them), and familiarity, or the sense that something is familiar in the absence of recollective details (e.g., being confident that you know the person in the supermarket when unable to remember the person’s name or anything else about them). Thus, for current purposes, the subjective experiences of recollection and familiarity are important, regardless of whether these accurately map onto two separate processes.

One of the most common methods of assessing these subjective experiences is to use the remember–know procedure (Tulving, 1985). Specifically, participants are asked on a memory test whether an item was remembered from an earlier study episode (i.e., contextual details associated with the item are remembered) or was just known (i.e., the item is remembered in the absence of contextual details). In a recent review concerning aging and remember-know judgments, McCabe, Roediger, McDaniel, and Balota (2009) concluded that older adults consistently demonstrate declines in the experience of recollection of studied items with familiarity being equivalent relative to their younger counterparts. This finding comports with previous research using other methods to disentangle recollection and familiarity processes (e.g., Jacoby, 1999; Jennings & Jacoby, 1997; Rhodes, Castel, & Jacoby, 2008). Given such an age-related deficit in recollection, we examined whether older adults can successfully monitor this deficit during learning.

Prior work has examined monitoring of memory empirically by eliciting judgments that are either prospective (e.g., feeling of knowing; FOK; Hart, 1965) or retrospective (e.g., confidence; Kelley & Lindsay, 1993). Among the most commonly elicited prospective judgments is the judgment of learning (JOL; see Nelson, 1996) in which participants are asked during encoding to assess the likelihood of remembering a particular item on a later test. That is, people are asked to predict their future memory performance. JOLs are typically made on a 0%-100% scale and are compared with test performance to determine metacognitive accuracy. Like the episodic memory controversy, there is some debate...
as to whether JOLs are based on a continuum of memory strength (e.g., trace access view; Cohen, Sandler, & Keglevich, 1991) or whether multiple cues, qualitatively different for one another, are used (cue utilization view; Koriat, 1997).

In terms of their predictive accuracy, JOLs are accurate by and large; however, there are cases in which JOLs are not related, or even negatively related, to later performance (e.g., Benjamin, Bjork, & Schwartz, 1998; Rhodes & Castel, 2008; Soderstrom & McCabe, 2011). Likewise, specifically regarding metacognitive accuracy and aging, the JOL literature is mixed. Daniels, Toth, and Hertzog (2009; see also Toth, Daniels, & Solinger, 2011) observed age differences in both the overall correspondence between predictions and performance (i.e., absolute accuracy), and in the extent to which participants’ JOLs discriminated between items that would or would not be remembered later (i.e., relative accuracy). Relevant to the present study, Daniels et al. also showed that recollection was a strong mediator for their reported age differences in metacognitive accuracy. Others, however, have reported age equivalence in terms of relative accuracy (e.g., Connor, Dunlosky, & Hertzog, 1997), and a recent review by Hertzog and Dunlosky (2011) suggests that relative accuracy remains intact across the life span. Thus, under some circumstances, older adults can accurately monitor their future memory performance, an encouraging finding given that common frameworks of metacognition assume that monitoring affects subsequent behavior (see Nelson & Narens, 1990). In fact, Dunlosky, Kubat-Silman, and Hertzog (2003) have suggested that such intact monitoring may serve as a basis for memory remediation in the elderly.

JOLs, as a consequence of how they are worded (i.e., Will you remember this in the future?), seek to determine what information people think will be remembered later. Recently, McCabe and Soderstrom (2011) asked participants how they think information will be remembered later. To do so, McCabe and Soderstrom adapted the previously discussed remember-know procedure (Tulving, 1985) to solicit Judgments of Remembering and Knowing (JORKs). Unlike traditional remember-know judgments that act retrospectively, asking participants to “look back” to determine whether an item is remembered or known, JORKs require people to “look forward” to determine whether contextual details will be remembered or not on a later test. That is, McCabe and Soderstrom asked participants to monitor their experiences of remembering and knowing. Results across a range of experiments using different instructions, materials, and outcome measures showed that JORKs better predicted memory than JOLs in nearly every case. For example, in one experiment, participants studied single words, making memory predictions—either JORKs or JOLs—after each item. JORKs were made on a three-point scale (“Will you Recollect, Know, or Forget this item?”), as were JOLs (WILL Remember <1–2–3> WON’T Remember). Following a recognition test, JORKs showed greater predictive accuracy than JOLs. Such findings led McCabe and Soderstrom to conclude that JORKs and JOLs comprise qualitatively different types of judgments.

For present purposes, JORKs offer a way to assess whether older adults can successfully monitor—during learning—their deficit in recollection. We report two experiments in which older and younger adults studied unrelated pairs of words and made JORKs for each pair. After this study phase, participants received a cued-recall test, allowing us to examine JORKs in light of actual memory performance. Older adults might be aware of the well-documented decline in episodic memory with age and thus might be less likely to predict recollective experiences relative to younger adults. Conversely, older adults may overestimate recollective experiences, perhaps being misled by the availability of recollective details during encoding. The current study is thus important both theoretically and practically. From a theoretical standpoint, the JORK paradigm offers a way in which we can advance our understanding of how metacognitive monitoring changes with age. Practically speaking, monitoring directly impacts subsequent behavior (see Nelson & Narens, 1990). Therefore, the degree to which older adults can accurately monitor recollective experiences might directly influence their approach to remembering information (e.g., using external memory aids).

**Experiment 1**

To investigate possible age differences in monitoring recollection, younger and older participants studied word pairs, making immediate, item-by-item JORKs after each of these pairs. That is, participants were asked to predict whether or not contextual details associated with each pair would be remembered on a later test (see McCabe & Soderstrom, 2011). This study phase was followed by a cued-recall test that also solicited traditional remember-know judgments, thus allowing a determination of how well participants’ memory predictions matched with their actual performance.

**Method**

**Participants**

Participants included 20 younger adults ($M = 18.65$ years; 80% female) and 20 older adults ($M = 70.55$ years; 75% Female) recruited from the Fort Collins community. The younger adults took part in the study in exchange for course credit; the older adults received $10.00 compensation for their participation. The older participants reported that they were in good health with an average rating of 4.05 on a five-point scale (1 = poor; 5 = excellent). All of the older participants reported at least some college education. Of the 16 participants who had completed college, three reported some postgraduate training, five had a Master’s degree, and two had a doctorate.

**Materials and Procedure**

Studied items included 40 unrelated word pairs, four of which (the first two and the last two) were used as primacy and recency buffers. Thus, only 36 pairs were included in the final analyses. All pairs were unrelated (e.g., Fork – Money; taken from Castel, McCabe, Roediger, & Heitman, 2007), and their order at study was randomized for each participant. Prior to beginning the study phase, the experimenter read instructions explaining the nature of the task. Participants were informed that they would be studying and making memory predictions for word pairs with the expectation of a later memory test. Furthermore, it was explained that predictions would be based on the experiences associated with remembering and knowing, with these judgments explained in detail (based on McCabe & Geraci, 2009). To reduce confusion among the terms “remembering” and “knowing,” “Type A” and “Type B” were used in their place, respectively (McCabe &
Geraci, 2009). That is, the experience of recollecting details associated with a certain memory was said to be called Type A memory, whereas the sense of familiarity devoid of recollective details was labeled as Type B memory. Participants were encouraged to ask questions in this and other phases of the experiment to ensure that they understood the instructions.

During the study phase, word pairs were presented one at a time in the center of the screen for 6 s each with a 500-ms interstimulus interval. Immediately after each word pair, participants made a JORK, denoting whether on a later memory test they would “remember” the word pair (Type A), “know” the word pair (Type B), or “forget” the word pair later. Responses were self-paced and given by pressing the 1–3 keys at the top of the keyboard. After each JORK was given, the next pair was presented and the procedure was repeated until all word pairs had been given a JORK. Immediately after the study phase, a short demographic questionnaire was completed by participants, acting as a brief filler task (approximately 2 min).

Participants then completed a cued-recall test, for which two different random-fixed order paper-and-pencil test sheets were created for purposes of counterbalancing. Half (18) of the studied cues were printed on the right side. Next to each word pair, the letters ‘A’ and ‘B’ were printed (e.g., Fork———A B). Participants first wrote down the target word that was presented with each cue word earlier. When finished with this initial cued recall task, participants placed their pencils atop their recall sheets to indicate that they were finished. After cued recall, participants made remember-know judgments for each recalled word pair by circling either ‘A’ or ‘B’ next to each pair. They were instructed to circle ‘A’ if recollective details from the earlier study phase accompanied their memory for that particular pair, or ‘B’ if they knew that they had studied the word pair, but no recollective details accompanied the item. Again, participants placed their pencils atop their recall sheets to indicate that they were finished. After the remember–know test, participants were given debriefing forms and dismissed from the experiment.

**Results and Discussion**

All descriptive statistics for Experiment 1 can be found in Table 1. Overall, younger adults recalled more items (43%) than older adults (23%), t(38) = 3.28, p < .01. However, we were primarily interested in the correspondence between memory predictions and test performance. In particular, we were interested in the comparison between predicted remembering at study and actual remembering at test, and whether this differed by age (see Figure 1).

We examined predicted and actual remembering in a 2 (Judgment Type: prediction vs. actual) × 2 (Age: young vs. old) mixed-model ANOVA. Overall, collapsing across Age, remember predictions were higher than actual remember judgments at test, F(1, 38) = 37.61, MSE = .03, η² = .50. No main effect of Age was found, F < 1. However, a reliable Judgment Type × Age interaction was evident, F(1, 38) = 15.83, η² = .30. In particular, for younger adults, predicted remembering did not differ from actual remembering at test, t(19) = 1.45, p = .17, d = .45. However, for older adults, predicted remembering was significantly higher than actual remembering at test, t(19) = 7.56, p < .001, d = 1.84, indicating that older adults were highly overconfident in predicting recollective experiences. Compared to younger adults, older adults predicted more remembering, t(38) = 2.18, p < .05, d = .65, but experienced less remembering at test, t(38) = -2.83, p < .01, d = .91.1

For completeness, we also analyzed data for know judgments and forgetting (see Table 1). Turning first to know judgments, a main effect of Judgment Type was found, F(1, 38) = 101.82, MSE = .01, η² = .73, such that, regardless of age, know predictions were higher than knowing at test. Both the main effect of Age and the Judgment Type × Age interaction were not reliable (Fs < 1). With regard to forgetting, a main effect of Judgment Type was found, F(1, 38) = 116.65, MSE = .04, η² = .75; there was no main effect of Age F(1, 38) = 2.36, MSE = .03, η² = .06; and the Judgment Type × Age interaction was reliable, F(1, 38) = 11.27, η² = .23. Follow-up comparisons showed that older adults underestimated forgetting, F(1, 19) = 171.15, MSE = .02, η² = .90, to a greater extent than younger adults, F(1, 19) = 19.58, MSE = .05, η² = .51, as indicated by effect size.

Although our primary interest was in the overall correspondence between JORKs and test performance (i.e., absolute accuracy), for completeness we also analyzed resolution (i.e., relative accuracy). This is an item-level measurement that captures the degree to which participants’ predictions discriminate between those items that are associated with high memory performance and those that are not. To do so, three relevant gamma correlations were calculated (see Nelson, 1984, for rationale regarding gamma correlations). First, we correlated JORKs with cued recall performance and found no difference between younger adults (G = .33; SE = .08) and older adults (G = .31; SE = .10), t(38) = 15, p = .88, d = .05. Second, we calculated gamma correlations between JORKs and actual remember-know test responses, and again found no differences between younger adults (G = .36; SE = .07) and older adults (G = .44; SE = .08), t(38) = 73, p = .47, d = .24. Finally, akin to our previous analysis in which we considered only predicted and actual ‘remembering,’ we correlated remember-only

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Proportion of Items Given Each Type of Memory Prediction (JORKs) and Test Response for Experiment 1</th>
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<tbody>
<tr>
<td></td>
<td>Younger adults</td>
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<tr>
<td>JORKs</td>
<td></td>
</tr>
<tr>
<td>Remember</td>
<td>.40 (.18)</td>
</tr>
<tr>
<td>Know</td>
<td>.34 (.12)</td>
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<tr>
<td>Forget</td>
<td>.26 (.17)</td>
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<td>Test responses</td>
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<tr>
<td>Know</td>
<td>.11 (.13)</td>
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<tr>
<td>Forgotten</td>
<td>.58 (.20)</td>
</tr>
</tbody>
</table>

Note. Standard deviations are reported in parentheses.

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1 Interestingly, whereas older adults recollected fewer items overall compared with younger adults, both age groups gave remember responses to approximately 74% of all recalled items. Our use of cued recall as the criterion test, where successful recall of any item would likely be dependent on recollection, may have been responsible. Nevertheless, our primary focus was on the anticipation of such recollective experiences as indexed by memory predictions.
predictions with remember-only test responses. Similar to the other resolution analyses, younger adults (\(G = .51; SE = .10\)) and older adults (\(G = .55; SE = .11\)) did not differ, \(t(38) = .26, p = .80, d = .09\). Thus, no age differences were found in resolution across a number of analyses, consistent with previous research on aging and metacognitive accuracy (Connor et al., 1997; Hertzog & Dunlosky, 2011).

In summary, Experiment 1 showed that older adults overpredicted recollective experiences compared to younger adults. Specifically, older adults gave relatively more remember predictions and fewer remember responses at test. Are these age-related differences in metacognitive accuracy attributable to differences in memory performance? To address this issue, we tested another group of younger adults matched with the current older adults in terms of actual memory performance (this was done by reducing the presentation rate of studied items and increasing the filler task time).\(^2\) Remembering at test was the same for younger adults (15\%) and older adults (17\%), \(t(38) = .43, p = .67, d = .14\); however, older adults predicted more remembering (53\%) than younger adults (31\%), \(t(38) = 3.04, p < .01, d = .96\). Thus, even when actual remembering was equated, older adults still predicted more recollective experiences than younger adults.

**Experiment 2**

The purpose of Experiment 2 was twofold. First, we sought to replicate the surprising result that older adults predict more recollective experiences than younger adults. Second, we addressed a potential problem with Experiment 1. Specifically, the remember–know test came after (not during) cued recall. By imposing a delay between recall and remember–know judgments, participants’ subjective experiences associated with each item may not have been captured accurately. Thus, during the test phase of Experiment 2, participants made remember–know judgments immediately after each recalled item.

**Method**

**Participants, Materials, and Procedure**

Participants included 16 younger adults (\(M = 19.88\) years; 69\% female) and 16 older adults (\(M = 71.22\) years; 69\% Female) recruited from the Fort Collins community. The younger adults took part in the study in exchange for course credit; the older adults received $10.00 compensation for their participation. Similar to Experiment 1, the older participants reported that they were in good health with an average rating of 3.75 on a 5-pt scale (1 = poor, 5 = excellent). All but one of the older participants reported at least some college education. Of those, one reported some postgraduate training, five had a Master’s degree, and one had a juris doctorate.

The materials and procedure for Experiment 2 were identical to Experiment 1 with one exception. Rather than making remember–know judgments after an initial cued recall phase for all items, participants in Experiment 2 made remember–know judgments after each recalled item. That is, the remember–know test was implemented during the cued recall phase rather than after it.

**Results and Discussion**

All descriptive statistics for Experiment 2 can be found in Table 2. Like Experiment 1, younger adults recalled more items overall (42\%) than older adults (16\%), \(t(30) = 6.00, p < .01\). However, as in Experiment 1, our primary interest was in potential age differences in the overall correspondence between predicted remembering and actual remembering at test (see Figure 2). Thus, we first conducted a 2 (Judgment Type: prediction vs. actual) \(\times\) 2 (Age: young vs. old) mixed-model ANOVA. Collapsing across Age, remember predictions were higher than actual remember judgments after an initial cued recall phase for all items, participants in Experiment 2 made remember–know judgments after each recalled item. That is, the remember–know test was implemented during the cued recall phase rather than after it.

\(^2\) Twenty younger adults took part in this experiment. The design and procedure were identical to Experiment 1 with two exceptions: The presentation rate of studied items was reduced from 6 s each to 1 s, and the filler task time was increased from 2 min to 8 min by adding a word search puzzle. These modifications were implemented to match younger and older adults’ memory performance.
younger adults, \( t(30) = -2.32, p < .05, d = 82 \), but experienced more forgetting at test, \( t(30) = 6.00, p < .001, d = 2.12 \).

Finally, for completeness, we also analyzed metacognitive accuracy via resolution. First, we correlated JORKs with cued recall performance and found no difference between younger adults \( (G = .27; SE = .09) \) and older adults \( (G = .51; SE = .11), t(30) = 1.73, p = .10, d = .60 \). Second, we calculated gamma correlations between JORKs and actual remember-know test responses, and again found no differences between younger adults \( (G = .37; SE = .08) \) and older adults \( (G = .51; SE = .12), t(30) = 1.00, p = .33, d = .35 \). Finally, we correlated remember-only predictions with remember-only test responses. Again, younger adults \( (G = .59; SE = .11) \) and older adults \( (G = .60; SE = .13) \) did not differ, \( t(30) = .03, p = .98, d = .02 \).

Modifying the procedure such that remember–know test judgments were made during the cued recall phase (not after it), Experiment 2 sought to replicate the primary finding of Experiment 1 that older adults overpredict recollective experiences compared with younger adults. The replication was successful: Older adults in Experiment 2 gave relatively more remember predictions and less remember test responses compared with younger adults. Following Experiment 1, we tested another group of performance-matched younger adults to rule out the possibility that age differences in overall memory performance were responsible for these results.\(^3\) Older adults predicted more “remembering” (50%) than these younger adults (37%), \( t(30) = 2.30, p < .05, d = .82 \), despite equivalent “remembering” at test (10% and 12%, respectively), \( t(30) = .85, p = .40, d = .21 \). Thus, as was the case in Experiment 1, older adults predicted more recollective experiences than younger adults even when overall memory performance was equated.

**General Discussion**

Motivated by the typical finding that older adults show a deficit in recollection relative to younger adults (Jacoby, 1999; McCabe et al., 2009), the current study examined whether older adults could successfully monitor this deficit during learning. In two experiments, younger and older adults studied word pairs, making item-by-item JORKs after each, predicting whether a later test item would be remembered, known, or forgotten (McCabe & Soderstrom, 2011). These predictions were then compared with their actual performance on a later remember–know test (Tulving, 1985). Overall, older adults were highly overconfident in their ability to recollect contextual details associated with items on a later test. That is, older adults predicted higher rates of remembering during study as compared with actual remembering at test. Younger adults’ predicted remembering, in contrast, matched more closely with their actual remembering. Thus, relative to younger adults, older adults were poorer at anticipating future recollective memory experiences. Indeed, both experiments yielded remarkably similar results in this regard with an additional analysis comparing predicted and actual remembering by age group across experiments showing no evidence of experiment-based interactions \( (Fs < 1).\(^4\) Finally, consistent with prior work (e.g., Connor et al., 1997), no age differences were found in terms of resolution.

Do these results reflect similarities in anchoring judgments? Specifically, if both younger and older adults “anchored” their predictions at the same point on the scale—that is, both groups give similar predictions around the midpoint—then differences in memory performance at test may be responsible for any age-related metacognitive accuracy differences (see Connor et al., 1997). We regard this explanation as unlikely. In particular, although older adults did show poorer memory performance, they actually provided more remember predictions than younger adults in both experiments, suggesting that these groups did not anchor their predictions in similar ways. Additionally, for each experiment, we tested additional groups of younger adults matched with the current older adults in terms of actual memory performance and found similar results. Thus, even when memory performance was equated, older adults still predicted more recollective experiences than younger adults.

There are a number of possible, potentially interdependent explanations for a monitoring-recollection deficit in older adults. First, it could be that older adults encode items in a manner that makes it difficult to later differentiate between items that will or

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**Table 2**

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<thead>
<tr>
<th></th>
<th>Younger adults</th>
<th>Older adults</th>
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<tbody>
<tr>
<td>JORKs</td>
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<tr>
<td>Remember</td>
<td>.38 (.13)</td>
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<td>Know</td>
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<td>Test Responses</td>
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<td>Know</td>
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<tr>
<td>Forgotten</td>
<td>.58 (.13)</td>
<td>.85 (.13)</td>
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*Note.* Standard deviations are reported in parentheses.

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\(^3\) Sixteen younger adults took part in this experiment. The design and procedure were identical to Experiment 2 except that the presentation rate of studied items was reduced from 6 s each to 1 s, and the filler task time was increased from 2 min to 8 min.

\(^4\) Specifically, we conducted a 2 (Remembering: predicted vs. actual) × 2 (Age: young vs. old) × 2 (Experiment: experiment 1 vs. experiment 2) mixed-model ANOVA. Remembering was a within-subjects variable, whereas Age and Experiment were both between-subjects variables.
OLDER ADULTS OVERPREDICT RECOLLECTION

will not be accompanied by contextual details (cf. Kelley & Sahakyan, 2003). That is, older adults may have trouble encoding information in an efficacious manner that supports later recollection (cf. Jacoby, 1999). One consequence of this poorer encoding is that older adults are often more prone to false remembering than younger adults (see Jacoby & Rhodes, 2006) and often hold such false memories with high levels of confidence (e.g., Dodson, Bawa, & Krueger, 2007; Dodson & Krueger, 2006; Kelley & Sahakyan, 2003; Rhodes & Kelley, 2005). The current study reveals another side to this deficit as older adults were more likely to overpredict future recollection than younger adults. Another possible explanation for the overestimation of recollection is that older adults might have difficulty remembering the item-specific associative material that they generated at study when queried at test. That is, the problem could be that of retrieval, not encoding (see Hertzog & Dunlosky, 2004, for more on this encoding-retrieval debate concerning aging). In a related vein, other work suggests that older adults may be less likely to spontaneously use the cues available at test to recapitulate their encoding experience, perhaps diminishing the availability of recollective details at test (Jacoby, Shimizu, Velanova, & Rhodes, 2005).

Regarding the specific finding that older adults predicted more recollective experiences than younger adults, one possibility is that older adults were “captured” by information—or the fluency in which this information came to mind—during the study episode to a greater extent than younger adults. That is, older adults may have been especially influenced by the associative information being generated during the study of the word pairs, leading to inflated predictions of remembering. Recent findings by Toth et al. (2011) bolster such a possibility. They showed that the accuracy of older adults’ memory predictions (JOLs) was hindered as a result of their predictions being overly influenced by their familiarity with a class of to-be-remembered names—in this case, 1950s actors. Indeed, they state that compared with younger adults, “older adults were more likely to base their JOLs on processing fluency and general familiarity” (p. 927). Thus, both the current results and those of Toth et al. suggest that older adults may have a somewhat distorted view of what encoding experiences will give rise to later recollection. Such an idea parallels work showing that older adults are often captured by misleading information when assessing the veracity of remembered items, a tendency that may contribute to age-related differences in false remembering (Jacoby, Bishara, Hessels, & Toth, 2005).

Although the current study was chiefly concerned with monitoring recollection, it should be noted that our data on older adults’ ability to monitor their forgetting—they underpredicted forgetting by 59% in Experiment 1 and by 71% in Experiment 2—is inconsistent with recent work on this topic. Specifically, Halamish, McGillivray, and Castel (2011) showed that older adults recalled less information than younger adults but more accurately monitored this deficit when asked to estimate the amount of forgotten information at test. That is, their estimates of forgetting closely matched actual forgetting. Procedural differences might account for this inconsistency between the current study and that of Halamish et al. Specifically, we solicited item-by-item prospective judgments, whereas Halamish et al. solicited aggregate retrospective judgments. Future research should consider these procedural differences, identifying those conditions in which older adults accurately monitor their forgetting and those conditions in which they do not.

In summary, the current study reports the novel finding that older adults show a deficit in monitoring recollection relative to younger adults. Although it has been known that recollective experiences decline with age (see McCabe et al., 2009), our study offers preliminary evidence that older adults may have difficulty monitoring a recollection deficit. This finding complements recent evidence showing that age differences in JOL accuracy may be mediated by recollection (Daniels et al., 2009; Toth et al., 2011). By extension, an important implication of these findings is that if older adults are unaware that certain recollective details will be forgotten at a later point in time, compensatory strategies to help remember these details may not be used. For example, an older adult may not use calendar notes or ask their spouse for reminders to help remember the details surrounding a doctor’s appointment (e.g., where it is, how to get there, the scheduled time, etc.), thinking that these details will not be forgotten. However, it is often the case that these sorts of details are forgotten. Thus, future research might be aimed at trying to minimize these metacognitive errors among the elderly so as to optimize learning.

References


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