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Task Demands Influence Earliest Age of “Accurate” Retrospective Reports

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Abstract

Use of retrospective reporting is widespread, but there is insufficient research guiding investigators' choice of target ages. This study examined young adult participants' self-reported accuracy of retrospective recall about childhood. We randomly assigned 498 university students to report about discipline they received when they were age 10 or age 13. Participants then reported about the accuracy of their recall and the earliest age for which they could accurately recall four types of information. There were no differences in self-reported accuracy based on group assignment. Participants assigned to report on age 10 had significantly younger estimates for earliest "accurate" recall as compared to participants reporting on age 13, though findings varied depending on recall topic. When choosing a target age for retrospective recall, researchers must balance likelihood of viable recall with relevance to their research questions.

Use of retrospective data in developmental and family research is widespread. Given the high cost of longitudinal studies in terms of time, money, and resources, retrospective reporting is often valuable and necessary. However, concerns have been raised about the reliability and validity of retrospective reporting (Hardt & Rutter, 2004). In addition, there is a need for research to determine the optimal recall period that combines relevance to the topic with maximum likelihood of accurate recall. The present study uses an experimental design to investigate participants' self-reported accuracy for retrospective recall of two ages.

Accuracy of Retrospective Recall

In terms of reliability, adults' retrospective reports show inconsistent stability across time. In one investigation of college-aged young adults across a 3-year span, approximately half of those reporting regular physical punishment at one time did not report punishment at the other time (Fergusson, Horwood, & Woodward, 2000). Conversely, among older adults, consistency of reports of physical punishment was good (κ of .6) across a 20-month span (Dube, Williamson, Thompson, Felitti, & Anda, 2004). Based on those findings, it may be that younger adults have more pliable childhood memories and that the memories become firmer and therefore more consistent over time.

Validity findings have also been inconsistent. Accuracy is generally high for whether events occurred. For example, 80% of those who had experienced physical punishment or abuse at age 6 to 12 reported some physical punishment or abuse 6 years later (Greenhoot, McCloskey, & Glisky, 2005). In studies of major adverse experiences, false negatives are much more likely than false positives (Hardt & Rutter, 2004). However, recall of more subjective information can be less accurate. Henry and colleagues (1994) evaluated a range of events, characteristics, and relationship variables every two years throughout childhood; when participants reached adulthood, they recalled the information. Recall was highly accurate for events such as moving ($r = .75$) and injuries ($r = .42$). Accuracy was also good for physical characteristics such as height ($r = .67$) and weight ($r = .59$). Recall of reading ability was also

good ($r = .56$ to $.66$). Recall of parental characteristics such as maternal depression was less accurate ($r = .16$), as were memory for attachment ($r = .36$) and family conflict ($r = .19$).

However, it should be noted that correspondence between children's self-reports and the concurrent reports of others is also low; for instance, in the same study, correlations among children's, parents', and teachers' reports of internalizing symptoms ranged from $.1$ to $.2$. Given that concurrent cross-informant as well as short-term test-retest data do not show perfect agreement, very high correlations across long periods would be implausible.

Age Effects

The average age for which childhood memories can first be remembered, also called the offset of childhood amnesia, has been found to occur around age 4 to 5 (Multhaup, Johnson, & Tetirick, 2005); individual offset ages vary, though recall prior to age 3 is rare. In addition to the presence of any memories, the number of memories that adults can recall regarding each year of childhood increases sharply after age 3 and levels off around age 7 (Rubin, 2000).

In terms of memory accuracy, adults are more likely to recall events from later childhood than from early childhood (Greenhoot et al., 2005; Williams, 1994). However, Henry and colleagues (1994) did not find a clear pattern of differential accuracy for reporting about different ages from 7 to 15; that is, reports about later childhood were not consistently more accurate than reports about earlier childhood. Given the widespread use of retrospective reporting, more research is needed to determine the age range for which adults can provide accurate reports.

Task Demands

There is limited research on the impact of task demands on adults' reported accuracy and age of retrospective recall. However, studies of suggestibility provide some insight into the influence of task demands. In one study, young adults initially reported an average age of 3.7 years for their earliest memories. Then, experimenters asked participants to focus on memories of their 2nd birthday. Following repeated questioning, the majority of participants reported memories prior to age 2 (Malinoski & Lynn, 1999). Although that study emphasized the

possibility of suggestibility using task demands, the findings also raise the possibility of eliciting earlier accurate memories by invoking memories of early events.

The present study evaluated the impact of targeted age of recall on two outcomes: self-reported recall accuracy, and earliest reported age of accurate recall. We hypothesized that participants would report more accurate recall for the older target age (13) than for the younger age (10). We also hypothesized that the target age would influence retrieval of other childhood memories, such that reporting on age 10 would lead to earlier estimates of accurate recall age than reporting on age 13.

Methods

Procedure

Participants were recruited through the psychology subject pool at a large university in the northeastern United States; the pool consisted of a mix of students from introductory and upper-level psychology classes. The experimenter emailed information about the study and a link to the study website to participants who signed up for the study. Participants received instructions to complete the study in a private setting; participants completed all measures anonymously through the study website at a time and place of their own choosing. All participants read the consent form and indicated their consent electronically. Participants completed the adult recall version of the Dimensions of Discipline Inventory {Straus, 2007 #1056}, a self-report questionnaire asking about mothers' and fathers' discipline and other parenting behaviors during the target age period. Immediately following the Dimensions of Discipline Inventory, participants completed questions created for this study about recall accuracy and earliest age of accurate reporting. Following those questions, participants completed several other measures concerning psychosocial functioning and other family relationships. After participants had completed all of the measures, they received a debriefing form explaining the purpose of the study and a list of mental health referrals. Participants

received extra credit or partial course credit for completing the study. University and departmental Institutional Review Boards approved all procedures and measures.

Participants were randomly assigned to one of two conditions: reporting on events that happened when they were 10 years old or 13 years old. Procedures and measures were identical for the two groups aside from the target age.

Participants

Participants were undergraduate students participating in a psychology subject pool. Initially 522 participants expressed interest in the study; of those, 507 participated in the study (97%). Four participants did not complete all measures in the study and were excluded; five additional participants were excluded due to large amounts of missing data, resulting in 498 participants. The two groups were equivalent on all demographic characteristics. There were 251 participants (76% female, $n = 190$) in the Age 10 group and 247 participants (76% female, $n = 187$) in the Age 13 group. Participants were college age (Age 10 mean = 19.15, $SD = 1.32$; Age 13 mean = 19.16, $SD = 1.31$) and predominantly Caucasian (Age 10 = 94% Caucasian, Age 13 = 96% Caucasian).

Measures

Accuracy. Participants answered two questions about the accuracy of their responses to the Dimensions of Discipline Inventory. First, “How accurately did you remember your parents’ discipline when you were 10 [or 13] years old?” Answer choices included: remembered very clearly, remembered pretty clearly, had a general sense of the time period, remembered some things but forgot others, and had a hard time remembering. The second question asked about specific versus general memory: “When answering questions, did you think about specific instances, use a combination of specific memories and a general sense of that time period, or estimate the frequency of events based on a general sense of that time period?”

Earliest “Accurate” Age. Participants answered four fill-in-the-blank questions about earliest age of recall: “What is the youngest age about which you could accurately report on

your behavior and misbehavior; your parents' discipline; your thoughts and feelings as a child; the relationship between your parents?" These topics were selected because of their coverage in the Dimensions of Discipline Inventory. Although most participants answered these questions with a specific age (e.g., 7), some provided a range (e.g., 6 to 8) or a grade level (e.g., 3rd grade). The midpoint was used for ranges, and grade levels were converted to ages. In addition, some participants had missing data due to general answers (e.g., "as far back as I can remember," "early childhood"), saying that they didn't know, not giving an answer due to reported inapplicability (e.g., "never misbehaved"), or giving examples of events rather than an age ("not cleaning my room").

Results

Accuracy. Contrary to prediction, there was no significant effect of group assignment on self-reported recall accuracy ($t_{(496)} = 1.18, p = .238$; see Table 1) or approach to answering questions ($t_{(496)} = -.39, p = .695$; see Table 1). The majority of participants from both groups indicated that they either remembered pretty clearly or had a general sense of the time period. There was also no significant effect of group assignment on approach to answering questions ($t_{(496)} = -.39, p = .695$; see Table 1). Most participants in both groups reported that they used a combination of specific memories and a general sense for recall.

Earliest "Accurate" Age. Consistent with our hypothesis, there was a significant main effect of group on earliest age of "accurate" recall ($F_{(1, 445)} = 4.83, p = .029$), with the Age 10 group reporting accurate recall significantly younger ages (mean = 7.7, $SD = .2$) than the Age 13 group (mean = 8.3, $SD = .2$). There was also a main effect of recall topic ($F_{(3, 445)} = 62.10, p = .000$), such that thoughts and feelings were reported to be remembered earlier than behavior/misbehavior and discipline, and parents' relationship was recalled earlier than the other three topics (see Table 2). Finally, there was a significant interaction between group and recall topic ($F_{(3, 445)} = 3.11, p = .026$; see Table 2). To examine the interaction, we conducted follow-up t-tests for each recall topic. There was a significant effect of group assignment on

reports about behavior and misbehavior ($t_{(464)} = -3.45, p = .001$) and parents' relationship ($t_{(451)} = -1.99, p = .047$), with the Age 10 group reporting significantly younger ages of earliest accurate recall in both cases. There were no significant differences between the groups for recall of discipline ($t_{(457)} = -1.52, p = .13$) or thoughts and feelings as a child ($t_{(457)} = -.60, p = .55$).

Discussion

Task demands, in this case asking for recall about age 10 or age 13, impact the estimated age of earliest accurate reports about childhood, consistent with our hypothesis; participants assigned to the younger group subsequently report earlier recall than the older group. This effect was evident for two topics, behavior/misbehavior and parents' relationship, but not for discipline or thoughts and feelings as a child. However, contrary to prediction, task demands did not affect self-reported accuracy of reports already provided, nor did they impact the type of memory accessed to provide reports.

This experiment indicates that task demands can cause participants to report earlier age of "accurate" recall than they might otherwise. However, the true accuracy of that recall is unknown. It may be the case that reporting about a younger age cues other early memories. Alternatively, beliefs about accuracy may be false; remembered events may be identified as having occurred earlier they really did. It is also conceivable that false memories could have been created, though unlike in other studies of false memory (e.g., Malinoski & Lynn, 1999), the present study did not employ hypnosis, repeated probing of unlikely ages, or suggestion.

The finding that the Age 10 and Age 13 groups reported equivalent recall accuracy indicates that the two target ages are equally appropriate for retrospective research. More research is needed to evaluate a wider range of ages; such work will shed light on the acceptable age range for accurate retrospective reporting, at least from the perspective of participants. Those findings can be combined with prospective research on which ages likely to elicit objectively accurate recall (as compared to reports obtained during childhood).

Unlike the bulk of prior research which has emphasized the earliest age of any recall (e.g., Multhaup et al., 2005), this study focused on the earliest age for which participants believed that they could accurately report on childhood. This distinction has important implications for researchers' use of retrospective reporting, which typically asks participants to provide detailed information about the target period rather than to provide only a single memory.

When choosing a target age for retrospective recall, researchers must balance likelihood of viable recall with relevance of the target age to their research questions. For the research described in this study, either age 10 or age 13 would be acceptable, since the two target ages are equally likely to elicit accurate reports according to participants. However, for the purposes of studying discipline, age 10 is more appropriate because of higher rates of misbehavior among children and higher frequency of discipline by parents. Although the preschool period would also be germane to discipline research, most participants do not believe that they can accurately report about the preschool period; asking participants to report about preschool would thus be likely to elicit either highly inaccurate reports or large amounts of missing data. However, in some instances it may be preferable to ask about periods of questionable reporting; for example, when researchers possess longitudinal data from early childhood that they want to compare to reports from the participants as adults (e.g., Williams, 1994). We recommend that researchers use pilot data to determine the optimal target age when eliciting retrospective recall and maximize the quality of their data.

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Table 1. Responses to questions about self-reported accuracy.

| | Age 10 (<i>n</i> =251) | Age 13 (<i>n</i> =247) |
|---|-------------------------|-------------------------|
| How accurately did you remember your parents' discipline when you were 10 [13] years old? | | |
| Remembered very clearly | 7.2% | 9.7% |
| Remembered pretty clearly | 34.7% | 33.6% |
| Had a general sense of the time period | 39.8% | 42.1% |
| Remembered some things but forgot others | 10.0% | 8.9% |
| Had a hard time remembering | 8.4% | 5.7% |
| When answering questions, did you...? | | |
| Think about specific instances | 24.7% | 22.3% |
| Use a combination of specific memories and a general sense of that time period | 52.2% | 54.7% |
| Estimate the frequency of events based on a general sense of that time period | 23.1% | 23.1% |

Note. No significant differences found between groups.

Table 2. Average age of earliest recall by topic and group.

| | Age 10 | Age 13 | Both groups |
|--------------------------|--------|--------|-------------|
| Behavior and misbehavior | 8.03 | 8.99 | 8.51a |
| Discipline | 8.21 | 8.67 | 8.44a |
| Thoughts and feelings | 7.99 | 8.17 | 8.08b |
| Parents' relationship | 6.67 | 7.21 | 6.94c |
| All topics | 7.73 | 8.26 | 7.99 |

Note. $N = 498$. Different subscripts denote significant differences.