


# Remembering the Presidents

K. Andrew DeSoto<sup>1</sup>  and Henry L. Roediger, III<sup>2</sup>

<sup>1</sup>Association for Psychological Science, Washington, DC, and <sup>2</sup>Department of Psychological and Brain Sciences, Washington University in St. Louis

Current Directions in Psychological Science  
 2019, Vol. 28(2) 138–144  
 © The Author(s) 2019  
 Article reuse guidelines:  
[sagepub.com/journals-permissions](http://sagepub.com/journals-permissions)  
 DOI: 10.1177/0963721418815685  
[www.psychologicalscience.org/CDPS](http://www.psychologicalscience.org/CDPS)  


## Abstract

Here we report research on how important historical figures—presidents of the United States—are remembered and forgotten. When students are given 5 min to recall presidents (in order, if possible), they remember the first few, the most recent, and Lincoln and his immediate successors better than the rest. When this study is done over time, a regular forgetting curve appears, allowing us to assess the rate of forgetting for more recent presidents. Some presidents (e.g., Kennedy) are being forgotten more slowly than others (e.g., Truman). People are more accurate in recognizing presidents than in recalling them, but they also show interesting false recognitions, identifying people such as Alexander Hamilton as a former president. Together, these studies provide a window into how groups of people remember salient figures from their group's past: its leaders. They also show that the effects derived from studying artificial materials in the lab may generalize more widely to other material with a different type of memory test.

## Keywords

collective memory, presidents, history, recognition, recall

Presidents of the United States are known by every U.S. citizen during their term of office, and they may be some of the most recognizable people in the entire world. Even so, presidents are now replaced every 4 or 8 years, and they fade from popular memory. Any American from the 1850s would have known many details about Franklin Pierce, but Americans today barely recall his presidency. Recently, we began a program of research to examine how presidents are remembered and forgotten. This enterprise forms part of a relatively new endeavor in psychology: the study of collective memory (Hirst, Yamashiro, & Coman, 2018; Roediger & Abel, 2015).

## Collective Memory

*Collective memory* refers to how members of groups, teams, and societies—even nations—remember their past. Historians, philosophers, sociologists, and others have long studied this topic from a descriptive standpoint, but psychologists are now joining this inquiry, studying the topic with their empirical tools. Today, the study of collective memory represents a true integrative effort, drawing on the theories and methods of a wide range of disciplines within, and outside of, psychological science.

Collective memory has been defined as a representation of the past that is shared by members of a group,

and often people find that membership in groups forms a key part of their identity (Wertsch & Roediger, 2008). Collective memory is distinguished from history; history aims to be an objective account of the past, can be quite complex, and revises its narrative on the basis of new historical evidence. Collective memory, however, is often subjective, and an individual's identity plays a crucial role. A group's collective memory sometimes collides with historians' accounts of the past, as the controversy over the removal of Confederate monuments in the U.S. South demonstrates (Wallace-Wells, 2017). Of course, in studying what we term collective memory, we do not presume to be studying a hive mind or collective consciousness. Instead, we study the individual memories of people who make up the collective.

As an entrée into studying collective memory, we have examined a particular aspect of history that we believe to be central: the memory for a nation's leaders. The aim is to apply cognitive psychology's toolbox to uncover aspects of collective memory for U.S. history that do—and in some cases, do not—fit our expectations.

## Corresponding Author:

K. Andrew DeSoto, Association for Psychological Science, 1800 Massachusetts Ave. NW, Suite 402, Washington, DC 20036  
 E-mail: [adesoto@psychologicalscience.org](mailto:adesoto@psychologicalscience.org)

## Collective Memory for a Nation's Leaders

In the mid-1970s, the second author collaborated in a study in which college undergraduates were asked to complete a straightforward task (Roediger & Crowder, 1976). The students were each given a sheet of paper with a series of blanks numbered consecutively, and they were asked to recall as many U.S. presidents as possible. They were asked to place the presidents in order, if possible, by putting them in the correct ordinal position (e.g., Abraham Lincoln beside number 16) or to list them anywhere on the sheet if they were unsure. The study was repeated in the early 1990s and reported in Crowder (1993). In the early 2010s, we collected a similar data set in the laboratory (Roediger & DeSoto, 2014). Although the studies were conducted decades apart, the data look remarkably similar, as can be observed in Figure 1a, which shows recall in the correct ordinal position.

The rich longitudinal data set collected over 4 decades afforded insights into how the U.S. presidents have been both remembered and forgotten over time. The findings replicate the classic serial position curve: The first few presidents are well remembered, dropping off with position (the primacy effect), and the last 10 or so presidents to have served in office at the time of testing are better remembered than those in the middle (the recency effect). Finally, Lincoln and his position as the 16th president are frequently recalled, probably because of his distinctive presidency during the Civil War. Lincoln also seems to have boosted remembrance of the presidents around him.

Interestingly, all of these effects—recency, primacy, and distinctiveness—are also found in a totally different type of material: the standard laboratory list-learning task in free recall. Serial position effects are ubiquitous in list learning (see Crowder, 1976, Chapter 12), as is the benefit of placing some distinctive event amidst other uniform events (Hunt, 2006). The reasons for the serial position curve in recall of presidents is debated, however, and has been the topic of continued scholarship. Healy, Havas, and Parker (2000) argued that the effect might simply be due to frequency of exposure to the presidents' names. On the other hand, Neath, Kelley, and Surprenant (2016) posited a relative distinctiveness principle, implying that the earliest and most recent presidents are unique among other presidents, improving memory for those individuals relative to presidents who were less distinct. The fact that Lincoln is also well remembered agrees with this theory, and the authors point to other evidence from several different paradigms (see Surprenant & Neath, 2009, Chapter 8). Kelley, Neath, and Surprenant (2015) showed that the same kind of serial position functions could be

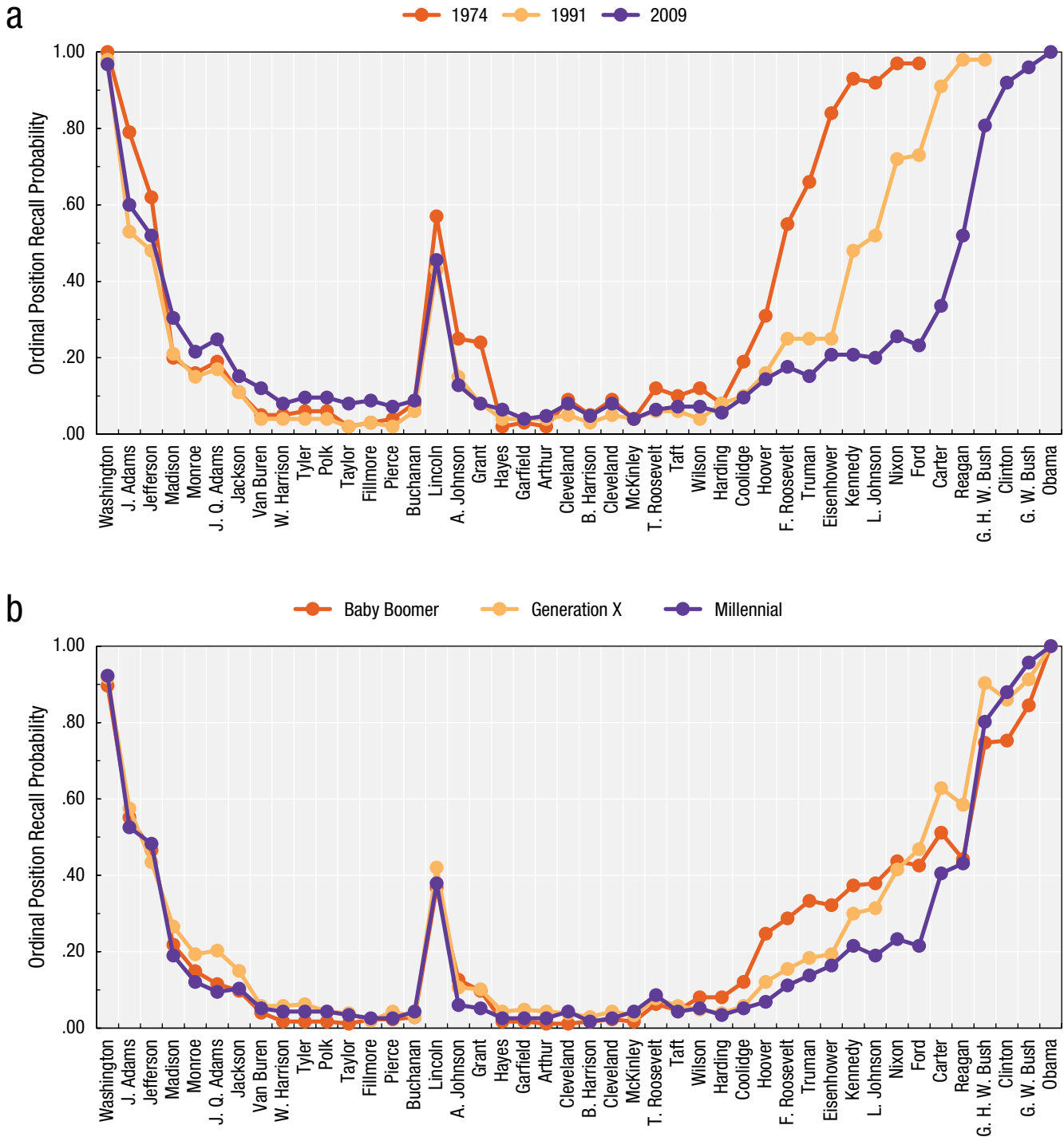
obtained in other tasks assessing general knowledge, indicating a general principle at work that transcends findings beyond recall of the presidents in the United States or Canadian prime ministers.

To complement the results of the longitudinal study, we also tested several hundred subjects, ranging from 18 to more than 80 years old, on their memories of the presidents using Amazon Mechanical Turk (Roediger & DeSoto, 2014). We divided subjects into generational groups on the basis of age—millennials, Generation Xers, and baby boomers. The data, collected in 2014 and shown in Figure 1b, were very similar to those of the longitudinal study (Fig. 1a) except for the recency functions. Subjects from all three groups had good memory for the first several presidents, but the results were slightly different for recent presidents—older subjects have been alive for more presidents and thus can better remember them. Still, everyone could remember the names of the last several presidents quite well.

Finally, collecting president recall data at different time points (as in Fig. 1a) allowed us to estimate the rate at which presidents are being forgotten from collective memory. We used recall of all presidents for this purpose, not just recall in order. If we assume that recall of each president would have been 100% while he was alive, then we have three other data points of interest from 1973 to 2011 for some presidents (i.e., from when the data were collected). Assuming that the characteristic forgetting function is a power function as it is in other situations (Wixted & Carpenter, 2007), we can use those four points to plot a forgetting curve.

These forgetting curves appear in Figure 2 and show the forgetting functions for Presidents Truman through Ford (the only ones for whom we have enough data and who show declines over time). Presidents Kennedy and Nixon are being forgotten, but more slowly than the others. The dashed line represents the average for presidents in the middle of the serial position curve (excluding Lincoln)—in other words, the presidents who have been fully “forgotten”—and it appears that memories of Truman, Ford, and Johnson will drop to this level by about 2040. Of course, these predictions will become more accurate as more data are collected, and we are wary of claiming precise predictions from four data points.

One consideration when interpreting the forgetting rates shown in Figure 2 is that recall of the presidents is potentially confounded by list length. That is, as time goes on, there are more presidents for individuals to recall. In a list-learning task, Murdock (1961) showed that the number of items to be remembered in a list affected memory for individual items in the primacy and middle parts of the serial position curve, with longer lists reducing performance. In our study, however, and as

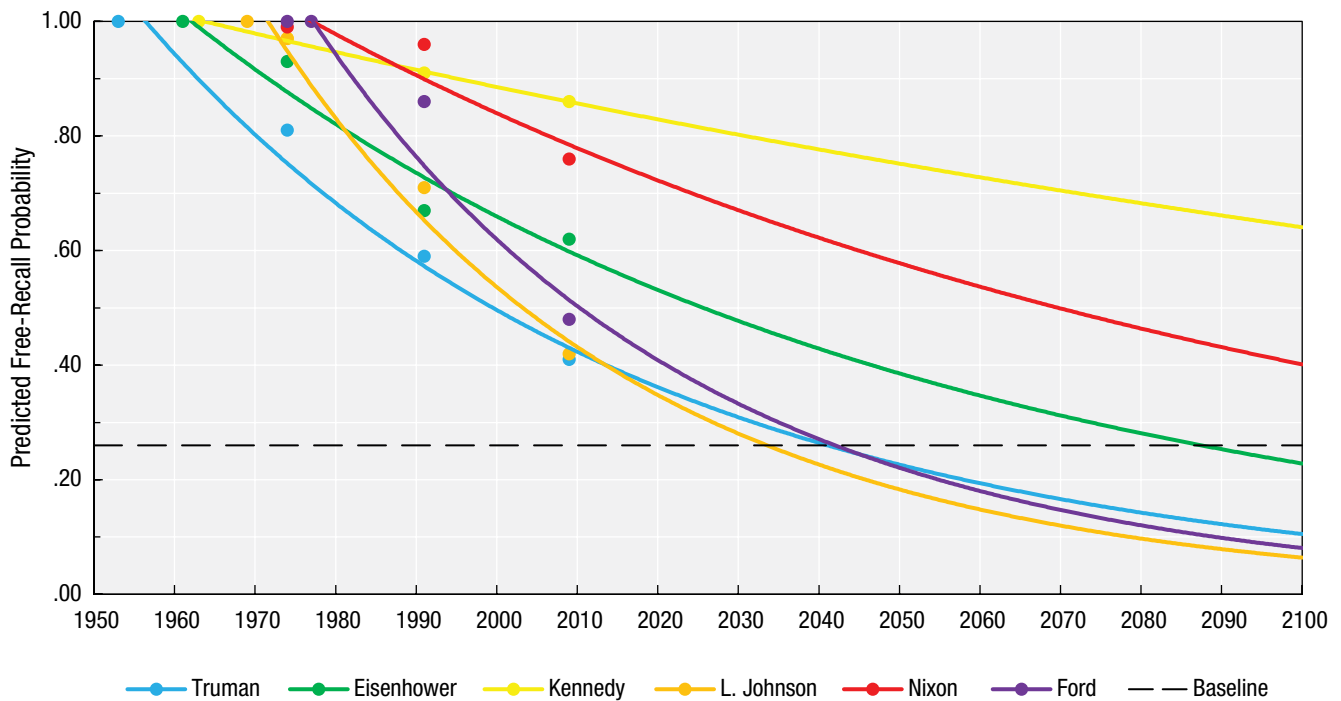


**Fig. 1.** Mean ordinal position recall of presidents across (a) college students of three different generations and (b) U.S. adults of three different generations: baby boomers (ages 50–69 years), Generation Xers (ages 30–49 years), and millennials (ages 18–29 years). Data in (a) are from Roediger and Crowder (1976), Crowder (1993), and Roediger and DeSoto (2014); data in (b) are from Roediger and DeSoto (2014).

shown in both Figures 1a and 1b, recall of individual presidents was roughly similar for those in the beginning and middle of the list over time (and hence list length). We suspect that list length does not much affect memory for the presidents, even for presidents not recalled very

poorly (e.g., Jefferson, Lincoln). The recency effects are also comparable across time, albeit for different presidents depending on the time of testing.

Today, psychologists are concerned with the reliability of the patterns found in their data, as they should



**Fig. 2.** Forgetting curves showing predicted free-recall probability for Presidents Truman through Ford from the years 1950 through 2100. Points indicate the proportion of the sample at a given time point that recalled each president correctly; the dashed line represents the average for presidents in the middle of the serial position curve (excluding Lincoln).

be (see DeSoto & Schweinsberg, 2017, for a brief discussion). We have now tested several samples of subjects on our task of recall of the presidents. Of course, the last few presidents are recalled differently over the decades from the 1970s until today. Recall of presidents from Washington to Coolidge seems stable over time, however. To determine whether the relative pattern of memory for presidents has been consistent, we correlated free recall of the first 38 presidents (Washington through Ford) over all our samples from 1973 to 2014. The correlation matrix for recall of these presidents is shown in Table 1. Despite widely different textbooks, teachers, social issues, media, and the like over the decades, recall of the first 38 presidents remains remarkably stable across these groups. The high correlations are even more impressive because the low recall for many presidents during the 1800s and 1900s (a floor effect) would work against such a finding.

In a conceptual replication of this article within another culture, Fu, Xue, DeSoto, and Yuan (2016) asked Chinese university students to complete a similar task. Subjects were given a list of the different periods of Chinese history (e.g., People’s Republic of China) and were asked to recall as many Chinese leaders (e.g., Mao Zedong) as possible. Results were similar to ours in that subjects were quite good at remembering the first leader or leaders of each period, but their recall

fell off sharply for following leaders. Unlike in our data, however, there were much weaker recency effects, except for in the most recent period. This is likely due to the structure of the test—children in school are taught the first leader of a particular historical period but not always the last leader of a period, and, of course, those leaders were not alive during the students’ lifetime (unlike the recent presidents in our study). On the other hand, Neath and Saint-Aubin (2011) showed

**Table 1.** Correlations of Free Recall of Presidents Over Six Samples

| Group              | 1   | 2   | 3   | 4   | 5   |
|--------------------|-----|-----|-----|-----|-----|
| 1. 1974            | —   |     |     |     |     |
| 2. 1991            | .94 | —   |     |     |     |
| 3. 2009            | .92 | .95 | —   |     |     |
| 4. Baby boomers    | .93 | .94 | .95 | —   |     |
| 5. Generation Xers | .91 | .94 | .96 | .97 | —   |
| 6. Millennials     | .90 | .96 | .97 | .96 | .99 |

Note: The three dated samples were college students at different universities, whereas the other three samples were from an Amazon Mechanical Turk sample collected in 2014 and divided by age group: baby boomers (ages 50–69 years), Generation Xers (ages 30–49 years), and millennials (ages 18–29 years). Correlations were computed for presidents Washington through Ford. All correlations,  $r(36)$ , are statistically significant,  $p < .001$ .

that Canadians' recall of their prime ministers exhibited both primacy and recency effects, as in recall of American presidents. Of course, because the United States and Canada are relatively new countries, only one list of leaders is recalled. Chinese history goes back centuries with many different historical periods, so the Chinese subjects' task was much harder. Still, in all the memory tasks, the first few items were best remembered, obeying what Tulving (2007) called the "law of primacy."

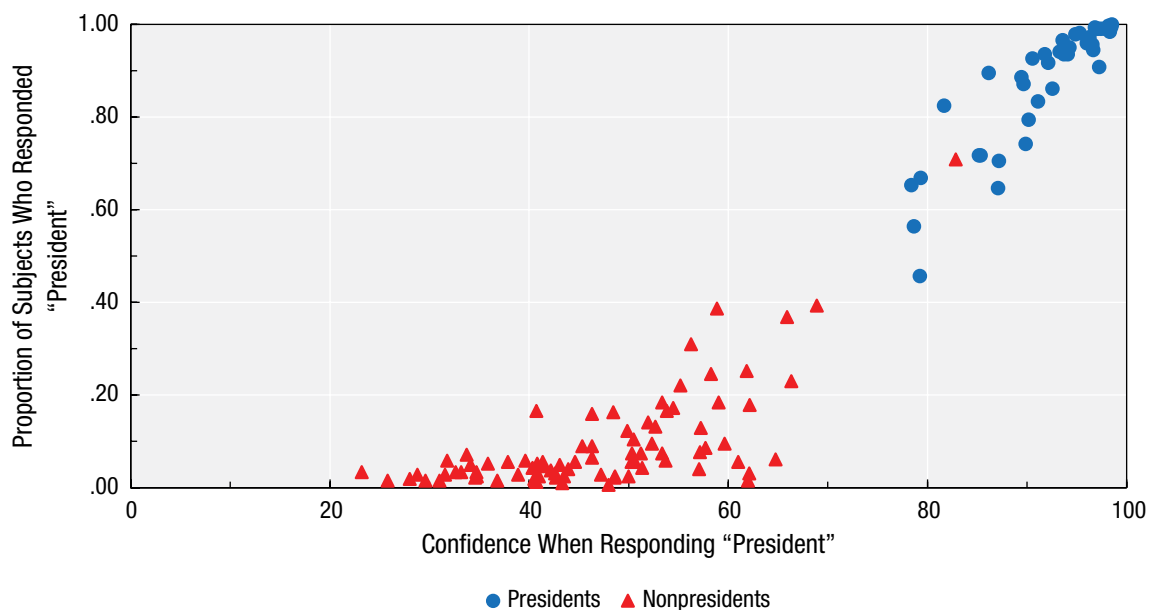
### Recognition of the Presidents

Our first set of experiments (Roediger & DeSoto, 2014) showed that Americans' memory for the U.S. presidents was generally lawful. However, the fact that subjects failed to recall presidents within a 5-min session does not mean they did not know them. Often, though not always, a recognition test provides access to information that people fail to recall. Thus, our next study (Roediger & DeSoto, 2016) investigated how well presidents are recognized. We were also interested in whether people would produce false memories of famous Americans as having served as president. A few subjects in our previous studies had recalled figures such as Benjamin Franklin as president. Famous names, especially of older historical figures, might serve as "deceptive items" (Koriat, 2017) and invite false recognition. Even though recognition tests are thought to be more sensitive than recall tests, they can also show high levels of false recognition (DeSoto & Roediger, 2014; Koriat, 2008).

In this study, we designed a set of materials that was split roughly equally by thirds among president names (e.g., James Madison), names of men who were vice president but never president (e.g., Elbridge Gerry—namesake of the word *gerrymander*), and names from U.S. history (e.g., Patrick Henry). We also included a few nonfamous Anglo-Saxon names in this last category (e.g., Thomas Moore). We tested 326 Mechanical Turk subjects, who viewed names one at a time and indicated whether the person had served as president. After subjects made their judgment, we asked them to rate their confidence in their answer on a scale from 0 (*low*) to 100 (*high*).

Assessing memory for the presidents via this method allowed us to examine the likelihood that subjects reported that presidents and nonpresidents were presidents. On average, subjects recognized approximately 88% of presidents, and they claimed that nonpresidents were presidents incorrectly only about 9% of the time. Moreover, we found a generally high correlation between confidence and accuracy (see Roediger & DeSoto, 2015); the greater number of people who named a person as president, the more confident they were, supporting Koriat's (2008) consensuality principle: The more people believe some fact, the more confident they are.

On the other hand, we did find false recognitions. Surprisingly, 71% of subjects judged Alexander Hamilton to have been president, and they also displayed relatively high confidence in his having been president, as shown in Figure 3. In fact, Hamilton was judged to have been president by more subjects than were six



**Fig. 3.** Scatterplot showing the association between the proportion of subjects who identified each name as that of a president and their average confidence in that identification. Each data point represents a name. Alexander Hamilton was the nonpresident outlier.

actual presidents. Moreover, when subjects reported that Hamilton was a president, they did so with very high confidence—over 80 on the scale from 0 to 100.

The high false-recognition rate of Alexander Hamilton as president raises many interesting questions for future research. When we conducted this study, the musical *Hamilton* had not yet debuted on Broadway, but researchers collecting similar (unpublished) data more recently reported that false recognition for Hamilton remains high even after the musical's rise in popularity (E. Tekin, personal communication, August 24, 2016; A. L. Putnam, personal communication, December 19, 2018), even though the musical makes clear that he was never president. Several other famous nonpresidents also provided relatively high levels of false recognition, including Hubert Humphrey (45%), Benjamin Franklin (39%), and John Calhoun (37%). Another surprise in the data was that the name Thomas Moore, chosen as a nonfamous name, turned out to receive many endorsements as president (31%). Although several congressmen with this name served over the years, none is well known. Sir Thomas More, famous in English history, died in 1535.

Is the recognition test more sensitive than the recall test? The answer must be yes and no. On the positive side, 88% of the actual presidents were correctly recognized, far above the correct recall rate (43% across our samples when scored without regard to correct order). On the other hand, false recall of presidents in our samples was relatively rare, at only 1% or 2% for any individual, but in our recognition test, many famous Americans were falsely recognized as having been president, and 9% of our nonpresidents, on average, were identified as presidents by subjects in our sample. Whatever process drives false recognition of presidents may also artificially boost recognition of actual presidents, and there is no simple way to correct for this issue in this type of recognition task. Presenting the actual name seems to invite both more accurate recognition as well as considerable false recognition for some names.

Following Jacoby, Woloshyn, and Kelley (1989), we previously argued that the frequency of mention of a famous name from American history could produce a false sense of familiarity attributed to the person being president (Roediger & DeSoto, 2016). However, general fame will not suffice; if Elvis Presley or Nelson Mandela had appeared as lures, we can safely predict that no one except pranksters would have deemed them to have been president. When someone is famous and we can remember why, then the misattribution is unlikely to occur (Gallo, 2013). Even by this account, though, why Thomas Moore was so likely to be falsely recognized remains a mystery, unless the name is familiar from English history but the source of the familiarity has been lost.

## Conclusion

Psychologists' study of collective memory is just beginning. Here, we show one promising way forward to measure how we remember and forget people (and potentially events, too) over time. Even though these measures of memory are completely unlike the kinds of materials that are used in laboratory research, such as word lists, we see the same effects emerging. In recall, there are primacy, recency, and distinctiveness effects, as well as regular patterns of forgetting. In recognition, we see high correct performance but also high false recognition, and this same pattern can be observed in list-learning paradigms used to study false memories (e.g., Roediger & McDermott, 1995). The fact that the same patterns emerge when using totally different materials suggests that overarching principles that transcend materials and types of memory may exist (Neath, 2010).

## Recommended Reading

- Davis, K. C. (2012). *Don't know much about history: The American presidents*. New York, NY: Hyperion. A brief history of the presidency as well as profiles of all presidents through Obama.
- Fu, M., Xue, Y., DeSoto, K. A., & Yuan, T.-F. (2016). (See References). A conceptual replication of the work reported by Roediger and DeSoto (2014) that tested Chinese students' recall of leaders from China's different historical periods.
- Neath, I. (2010). (See References). A theoretical model, based on distinctiveness, that describes how individuals recall the U.S. presidents.
- Roediger, H. L., III, & DeSoto, K. A. (2014). (See References). A report on three generations of college students' abilities to recall the names of the U.S. presidents and place them in correct ordinal position, including a replication that tested individuals across different age groups.
- Roediger, H. L., III, & DeSoto, K. A. (2016). (See References). A test of individuals' abilities to recognize the names of the U.S. presidents and their confidence when making those identifications when they are presented among similar names.

## Action Editor

Randall W. Engle served as action editor for this article.

## ORCID iD

K. Andrew DeSoto  <https://orcid.org/0000-0001-9061-0301>

## Acknowledgments

We thank James Nairne, Ian Neath, Rebecca Koenig, Anna Mikulak, and Adam Putnam for their helpful comments on earlier drafts of this manuscript and Brian Winters for editorial advice.

## Declaration of Conflicting Interests

The author(s) declared that there were no other potential conflicts of interest with respect to the authorship or the publication of this article.

## References

- Crowder, R. G. (1976). *Principles of learning and memory*. Hillsdale, NJ: Erlbaum.
- Crowder, R. G. (1993). Short-term memory: Where do we stand? *Memory & Cognition*, *21*, 142–145. doi:10.3758/BF03202725
- DeSoto, K. A., & Roediger, H. L., III. (2014). Positive and negative correlations between confidence and accuracy for the same events in recognition of categorized lists. *Psychological Science*, *25*, 781–788. doi:10.1177/0956797613516149
- DeSoto, K. A., & Schweinsberg, M. (2017). Replication data collection highlights value in diversity of replication attempts. *Scientific Data*, *4*, Article 170028. doi:10.1038/sdata.2017.28
- Fu, M., Xue, Y., DeSoto, K. A., & Yuan, T.-F. (2016). Remembering the leaders of China. *Frontiers in Psychology*, *7*, Article 373. doi:10.3389/fpsyg.2016.00373
- Gallo, D. A. (2013). Retrieval expectations affect false recollection: Insights from a criterial recollection task. *Current Directions in Psychological Science*, *22*, 316–323. doi:10.1177/0963721413481472
- Healy, A. F., Havas, D. A., & Parker, J. T. (2000). Comparing serial position effects in semantic and episodic memory using reconstruction of order tasks. *Journal of Memory and Language*, *42*, 147–167. doi:10.1006/jmla.1999.2671
- Hirst, W., Yamashiro, J. K., & Coman, A. (2018). Collective memory from a psychological perspective. *Trends in Cognitive Sciences*, *22*, 438–451. doi:10.1016/j.tics.2018.02.010
- Hunt, R. R. (2006). The concept of distinctiveness in memory research. In R. R. Hunt & J. B. Worthen (Eds.), *Distinctiveness and memory* (pp. 3–26). New York, NY: Oxford University Press.
- Jacoby, L. L., Woloshyn, V., & Kelley, C. (1989). Becoming famous without being recognized: Unconscious influences of memory produced by dividing attention. *Journal of Experimental Psychology: General*, *118*, 115–125. doi:10.1037/0096-3445.118.2.115
- Kelley, M. R., Neath, I., & Surprenant, A. M. (2015). Serial position functions in general knowledge. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *41*, 1715–1727. doi:10.1037/xlm0000141
- Koriat, A. (2008). Subjective confidence in one's answers: The consensuality principle. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *34*, 945–959. doi:10.1037/0278-7393.34.4.945
- Koriat, A. (2017). Can people identify “deceptive” or “misleading” items that tend to produce mostly wrong answers? *Journal of Behavioral Decision Making*, *30*, 1066–1077. doi:10.1002/bdm.2024
- Murdock, B. B. (1961). The retention of individual items. *Journal of Experimental Psychology*, *62*, 618–625. doi:10.1037/h0043657
- Neath, I. (2010). Evidence for similar principles in episodic and semantic memory: The presidential serial position function. *Memory & Cognition*, *38*, 659–666. doi:10.3758/MC.38.5.659
- Neath, I., Kelley, M. R., & Surprenant, A. M. (2016). Three semantic serial position functions at the same time. *Experimental Psychology*, *63*, 351–360. doi:10.1027/1618-3169/a000344
- Neath, I., & Saint-Aubin, J. (2011). Further evidence that similar principles govern recall from episodic and semantic memory: The Canadian prime ministerial serial position function. *Canadian Journal of Experimental Psychology*, *65*, 77–83. doi:10.1037/a0021998
- Roediger, H. L., III, & Abel, M. (2015). Collective memory: A new arena of cognitive study. *Trends in Cognitive Sciences*, *19*, 359–361. doi:10.1016/j.tics.2015.04.003
- Roediger, H. L., III, & Crowder, R. G. (1976). A serial position effect in recall of United States presidents. *Bulletin of the Psychonomic Society*, *8*, 275–278. doi:10.3758/BF03335138
- Roediger, H. L., III, & DeSoto, K. A. (2014). Forgetting the presidents. *Science*, *346*, 1106–1109. doi:10.1126/science.1259627
- Roediger, H. L., III, & DeSoto, K. A. (2015). Understanding the relation between confidence and accuracy in reports from memory. In D. S. Lindsay, C. M. Kelley, A. P. Yonelinas, & H. L. Roediger, III (Eds.), *Remembering: Attributions, processes, and control in human memory: Essays in honor of Larry Jacoby* (pp. 347–367). New York, NY: Psychology Press.
- Roediger, H. L., III, & DeSoto, K. A. (2016). Recognizing the presidents: Was Alexander Hamilton president? *Psychological Science*, *27*, 644–650. doi:10.1177/0956797616663113
- Roediger, H. L., III, & McDermott, K. B. (1995). Creating false memories: Remembering words not presented in lists. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *21*, 803–814. doi:10.1037/0278-7393.21.4.803
- Surprenant, A. M., & Neath, I. (2009). *Principles of memory*. New York, NY: Psychology Press.
- Tulving, E. (2007). On the law of primacy. In M. A. Gluck, J. R. Anderson, & S. M. Kosslyn (Eds.), *Memory and mind: A festschrift for Gordon H. Bower* (pp. 31–48). Hillsdale, NJ: Erlbaum.
- Wallace-Wells, B. (2017, December 4). The fight over Virginia's Confederate monuments. *The New Yorker*. Retrieved from <https://www.newyorker.com/magazine/2017/12/04/the-fight-over-virginias-confederate-monuments>
- Wertsch, J. V., & Roediger, H. L., III. (2008). Collective memory: Conceptual foundations and theoretical approaches. *Memory*, *16*, 318–326. doi:10.1080/09658210701801434
- Wixted, J. T., & Carpenter, S. K. (2007). The Wickelgren power law and the Ebbinghaus savings function. *Psychological Science*, *18*, 133–134. doi:10.1111/j.1467-9280.2007.01862.x