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# Three Facets of Collective Memory

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Collective memory refers to the memories that individuals have as members of the groups to which they belong, whether small (family, school) or large (political party, nation). Membership in some groups can form a strong part of a person's individual identity. Collective memory is history as people remember it; it is not formal history, because the "memories" of a group are often contradicted by historical fact. Although collective memory is held within individuals, it has rarely been studied by psychologists, because they have concentrated on studying the learning of individual events (such as word lists) in the laboratory or retrieving events of one's life (autobiographical memory). Three facets of collective memory are the focus of this article. First, collective memory can be a body of knowledge about a topic. However, this knowledge base may change over generations of a people. Second, collective memory often portrays an image of a people, and often this image arises from the group's origin story or charter. Third, collective memory is a process; collective remembering can reveal disputes and contestations about how the past should be remembered. One useful purpose of collective memory studies is to capture how different groups and societies remember their history and to discern their shared perspective on the world and how such perspectives differ among groups.

#### Public Significance Statement

Collective memory is historical memory, or individuals' memories that reflect the groups to which they belong. Understanding a nation's collective memories helps to understand their perspective. For example, in the United States, the debate about removing Civil War statues in the South is a debate over how that war should be remembered. Collective memory suffuses many debates within and between groups.

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Collective memory refers to memories people share as members of a group, and such memories often form an important part of a person's social identity. The group can be

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large (one's nation) or small (one's family, one's softball team). However, the term is used by researchers in somewhat different ways, because the topic of collective memory is interdisciplinary. It is studied by sociologists (e.g., Olick, 1999), psychologists (Hirst et al., 2018), and literary scholars (Erll, 2011a) among others. Psychologists usually study memory in individuals, and the study of collective memory is relatively new in psychological science (Hirst & Manier, 2008; Wertsch & Roediger, 2008). The study of collective memory was initiated by Maurice Halbwachs (Halbwachs, 1992) nearly a century ago. Throughout its history of study, scholars have used literary, historical and qualitative modes of inquiry and have produced a large body of scholarship bearing on the topic (see Olick et al., 2011, for a sampling). More recently, psychologists and other researchers have applied their empirical and even experimental approaches to the topic. Social psychologists (Pennebaker et al., 1997) and cognitive psychologists (Hirst et al., 2018) have led the way.

The purpose of this article is to introduce psychologists of the study of collective memory by discussing three lines of research for dealing with different aspects of the topic.

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Given the nature of this contribution as an award article, I take the liberty of using my own research for illustration of the three aspects of collective memory. First, however, I discuss some conceptual distinctions that help to clarify the nature and meaning of collective memory.

## **Conceptual Oppositions**

Three contrasts help to delineate the study of collective memory: Individual versus collective memory, history versus collective memory, and collective memory versus collective remembering. I treat each briefly here. Wertsch and Roediger (2008) provided a more extended discussion.

## Individual Versus Collective Remembering

Psychologists and neuroscientists have almost always made the individual organism the basis of their studies of learning and memory. The organisms include sea slugs, fruit flies, rats, pigeons, cats, dogs, and many other animals, including humans. Cognitive psychologists and cognitive neuroscientists typically study young adults, whereas developmental psychologists may study children and older adults. In all these cases, the individual is given experiences, usually in a lab setting, and then tested for memory of those experiences. The experiences could be reward or shocks with presentation of a stimulus in the case of infrahuman animals (e.g., see Domjan, 2015, for a review) or words, pictures, or other material for humans (see Baddeley et al., 2020, for a review). The creatures in these studies usually are tested in isolation.

Yet, people often remember in group settings, so transmission of information in groups and how the members of the group remember the information, has recently received attention from researchers (e.g., Coman et al., 2016; Rajaram & Maswood, 2018). Inquiries into collective memory can also focus on memories passed on via even larger groups. How do Americans remember Christopher Columbus, the Civil War, or World War II? Now the unit of analysis may be the U.S. population as a whole, and researchers can inquire about cross-national differences in memory for "the same" event, such as World War II. I return to this topic later. The group on which this article is focused is the nation state, or one's country. Collective memory studies can be focused on large national groups or smaller groups such as one's city or family or religion. Of course, memories can also "travel" across the world, ignoring country boundaries, as occurs with global phenomena like Tik Tok (Erll, 2011b).

In summary, in collective memory studies, interest focuses on memories of the group. However, this is not to imply that there is somehow a group mind; memories of the group are held by individuals, and even individuals within a population may disagree in how they remember the past, as we show below for Americans.

## **History Versus Collective Memory**

Historians attempt to provide an objective account of the past, although of course they have their own perspectives and biases in their approaches (Blake, 1955; Novick, 1988). Collective remembering, on the other hand, is subjective; it is how the past is remembered by a group of people to whom the past events in question are important. Contemporary historians do not maintain that Columbus discovered America and that he is a hero for doing so. However, surveys show Americans still tend to believe the Columbus-asdiscoverer myth, although that view is slowly changing (Corning & Schuman, in press). Historians often explain past events as due to sets of complex forces, but in collective or popular memory, the story of the past is simplified. The remembered past often forms part of the rememberer's identity, and often the past is seen as glorious, as when Americans speak of "the greatest generation" fighting in World War II (Brokaw, 1998).

Collective remembering often involves an identity project, of how things were and should be again, as embodied in the saying "Make America Great Again." Thus, one's identity is wrapped in collective memory. The idea of returning to a golden age permeates collective memory in many societies. Further, when contrary evidence is discovered that bears on a historical narrative, that narrative is often changed by historians. In contrast, collective memory is often resistant to new evidence that contradicts the story. Collective memory relies on schematic stories that can be passed down across generations, such as the myth of the Lost Cause in the South, which existed from about 1870 and into modern times and is still believed by many today (Blight, in press). The Lost Cause narrative tried to justify the South's secession as due to other reasons (such as states' rights) rather than slavery. I grew up in the South and learned the Lost Cause narrative as history (see https:// rationalwiki.org/wiki/Lost\_Cause\_of\_the\_South).

In short, collective memory is subjective and forms part of an identity project that is resistant to change. History aims to be objective, complex, and willing to change as new archival evidence comes to light. Collective memory is sometimes referred to as popular memory or even popular history—history as people remember it—and is generally resistant to change.

## **Collective Memory Versus Collective Remembering**

Collective memory can be considered a body of knowledge, of what we know (or think we know) about the past, for example, that George Washington was a famous general in the Revolutionary War and later became president. This sense of collective memory is like Tulving's (1972) conception of semantic memory, our general knowledge, although collective memory is the group's body of knowledge about its past. Collective remembering is the active form, of events being repeatedly recalled by different people and their memory perhaps changing over time (Bartlett, 1932; Roediger et al., 2014). As we shall see in the discussion below, even collective memory as a body of knowledge can change over time.

Collective remembering often involves what are called "mnemonic standoffs," when two groups cannot agree on how the past is to be remembered and neither budges. One example is represented in plans that were made by the National Air and Space Museum in the United States in the early 1990s for an exhibit featuring the Enola Gay, the airplane that dropped the atomic bomb on Hiroshima in World War II. When the plans were released, groups of U.S. veterans became quite upset, because the narrative of the exhibit questioned whether the bombing was necessary and featured the devastation of the city and its people. The veterans wanted an emphasis on how the bombings ended the war; thus, providing an heroic story. In this case, the original plans for the exhibit were scrapped and then reformulated. Linenthal and Engelhardt (1996) called the dispute "a history war," but it might more appropriately be called a war of collective memory or a mnemonic standoff. In summary, collective memory is relatively stubborn and static, whereas collective remembering is an active process of reconstructing the past with contrasting views leading to conflicting visions. However, these terms can be considered as endpoints on a continuum, because even collective memory as a body of knowledge can change, especially across generations (Corning & Schuman, 2015).

## Three Aspects of Collective Memory

The remainder of this article will be organized around three facets of collective memory, ones that have been anticipated by the oppositions just discussed. The three facets I discuss are those described by Dudai (2002). Collective memory can be considered as (a) a body of knowledge on some topic; (b) an attribute of a people (the image they have of themselves in historical memory); and (c) a process, of how collective memory can be debated and reconstructed. I use research from my lab to illustrate these three aspects of collective memory are not independent but rather intersecting. Although collective memory is an interdisciplinary and international field of study, my examples will mostly focus on collective memory in the United States.

## Collective Memory as a Body of Knowledge

Collective memory is not history, but people often have a consistent story about their past even if it is not an accurate one. Yet the story can slowly change over time. Dudai (in press) notes that the Biblical story of the Exodus of Jews from Egypt under the leadership of Moses, which is a foundational story for Jews, Christians, and Muslims, has no historical basis (Assman, 2018). That is, there is no documented history of Jews living in

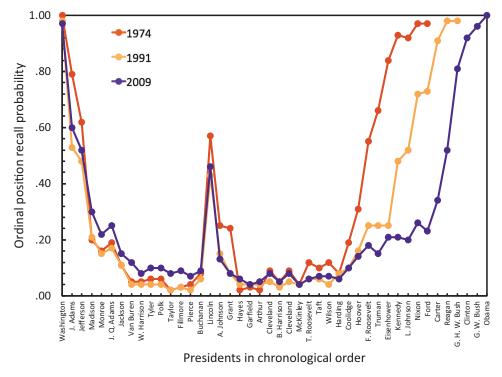
Egypt and migrating to the middle east. In fact, there is no historical record of a man named Moses ever having lived (Assman, 1997); no archaeological evidence nor written evidence attests to his existence until long after he was said to have died. Thus, historians today believe that Moses is largely a mythical figure, although some man (or men) and their feats may have served as the basis of the myth. Nonetheless, for people of several faiths, the memory of Moses is celebrated. It is the belief that matters for collective memory, not the historical facts as they are understood.

In modern times, people have famous leaders whose lives, and the events of their lives, become legendary. Leaders in each country can serve that purpose. Many kings and queens of England have taken on mythic status, as have some statesmen like Winston Churchill. In the United States, presidents often take on mythic status and events of their lives are recounted and retold, whether true or not (e. g., George Washington cutting down the cherry tree). Studies of how and why some leaders become central in collective memory and others do not would be welcomed (see Meier, 2021, for an example).

Next we ask a related question: How rapidly do leaders fade from collective memory? As I write these words, all adult Americans can easily remember Barack Obama, Donald Trump, and Joe Biden. But how fast will they fade from modern memory? Roediger and DeSoto (2014) asked this question with regard to relatively recent presidents of the United States, using a data set collected during three time periods from 1973 to 2009. In 1973-1974, Roediger and Crowder (1976) asked Yale and Purdue students to recall as many presidents as possible, putting them in order (on a sheet with 37 or 38 entries, for the number of presidents in those years).<sup>1</sup> If they could remember a president but not his order, they were told to guess the order or to write his name anywhere on the sheet. They were given 5 min for the task. The results shown in the red line in Figure 1 are recall of the presidents, in order. The data reveal a marked primacy effect (everyone remembers that Washington was the first president and many get the next five or so presidents) and a strong recency effect (everyone gets the current president and a few before him). In addition, Lincoln and the presidents just after him get a boost, too, probably because of the importance of Lincoln and the Civil War in U.S. history. In studies of individual memory of events in the lab (e.g., words presented in a list), primacy and recency effects are typically observed in free or ordered recall. Likewise, a distinctive item (say a picture) placed in the middle of an otherwise uniform list of words is also well recalled from episodic memory (Hunt & Lamb, 2001; Schmidt et al., 2021). Thus, recall from

<sup>&</sup>lt;sup>1</sup> Richard Nixon was president in 1973, but he was forced to resign on August 8, 1974. Gerald Ford, Speaker of the House, became president, because vice-president Spiro Agnew had already resigned because of a scandal. Purdue subjects were tested in fall of 1974.





*Note.* The curves are quite similar up through the era of Harding and Coolidge, but then the recency effects diverge with the era of the students. Strong primacy and recency effects are observed, as in recall of word lists, as well as an isolation or distinctiveness effect in the case of Lincoln. From "Forgetting the Presidents," by H. L. Roediger and K. A. DeSoto, 2014, *Science, 346*, p. 1107, Fig. 1A. Copyright by the American Association for the Advancement of Science. Reprinted with permission. See the online article for the color version of this figure.

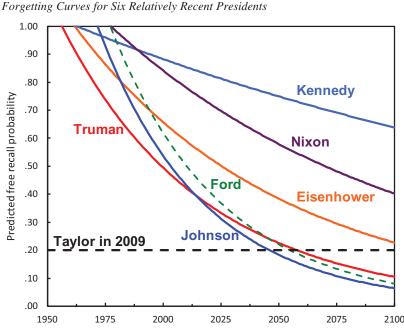
episodic and from semantic memory show some similarities (Roediger & Crowder, 1976).

This same procedure of recalling the presidents was repeated in 1992 with Rice and Yale students (Crowder, 1993), and then again by Roediger and DeSoto in 2009 with Washington University undergraduates (reported in Roediger & DeSoto, 2014). Their results are shown in the orange and blue lines, respectively, in Figure 1. The recency effects differ, of course, but the data from Washington to Harding or Coolidge are remarkably similar. The students tested in 1991 had not been born when those in 1973–1974 were tested, and those tested in 2009 were infants when students were tested in the early 1990s. Nonetheless, the results were nearly identical in the earlier part of the serial position curve, and similar primacy and recency effects have been shown for memory of Chinese leaders (Fu et al., 2016) and Canadian prime ministers (Neath & Saint-Aubin, 2011).

Forgetting in these data can be measured in two ways. The most intuitive is simply to look at the recency effect. The current president and the one before him are recalled perfectly, or nearly so, and then recall begins to decline as one moves backward in time. That is, the recency effect is a forgetting curve plotted backward, as time recedes from the present. Recall drops steadily for 9–10 presidents in each of the three cases before leveling off. However, keep in mind that the data in Figure 1 show recall of the presidents in order, and often it is the order of the president that is being forgotten (e.g., the placement of Carter, not whether he was president).

The second way of measuring forgetting can be seen by examining recall of presidents by the three different groups. Take, for example, Lyndon B. Johnson. He was recalled in the correct position 92% of the time in 1974, 52% in 1991, and only 20% in 2009. We can assume he could have been recalled 99–100% of the time while he was in office. Thus, with these four data points, and our knowledge of the fact the forgetting curves are power functions (Wixted & Ebbesen, 1991), we can construct a forgetting curve.

The forgetting curves that Roediger and DeSoto (2014) created for relatively recent presidents are shown in Figure 2. However, they used data from scoring recall of the presidents in any order, not in serial order as in Figure 1 (see Figure 2 in the 2014 paper for recall of presidents in any order). For example, the three data points for Johnson when scored with this free recall criterion are much higher than those figures



*Note.* The curves are created from four data points (assuming recall was 100% during the presidency and then three empirically derived points) with the further assumption that forgetting curves are best represented by a power function. From "Forgetting the Presidents," by H. L. Roediger and K. A. DeSoto, 2014, *Science, 346*, p. 1108. Copyright 2014 by the American Association for the Advancement of Science. Reprinted with permission. See the online article for the color version of this figure.

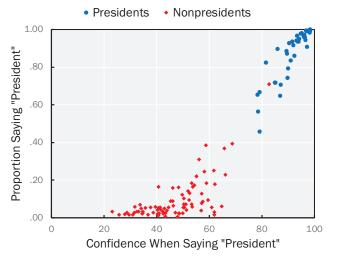
given in the previous paragraph at 97%, 71%, and 42%. As can be seen in Figure 2, the presidents are being forgotten at quite different rates. Kennedy and Nixon are being forgotten relatively slowly, but Truman, Eisenhower, Lyndon B. Johnson, and Ford are being rapidly forgotten. The dashed line in the figure shows the asymptotic level of recall for presidents in the flat part of the serial position curve for presidents like Zachary Taylor. We can see the predicted rate for each of the presidents to fall to this baseline level. For example, Lyndon B. Johnson is predicted to fall to the level of Zachary Taylor and other relatively forgotten presidents by about 2046. Although the heading of this section is how collective memory is a body of knowledge, the data here make clear that this body of knowledge changes across generations (see Corning & Schuman, 2015, for additional evidence on this point).

In our studies of recall of presidents, we found that U.S. college students could recall about half of them. But surely they knew more. After all, they had all taken American history in high school and likely been exposed to all the presidents' names at some point in their education. In another study, we addressed this issue with a recognition test. Perhaps students would recognize all the names of presidents, because recognition tests are thought to be more sensitive to knowledge than recall tests. To this end, we created a recognition test in which we mixed the presidents' names (except for John Adams and George Bush, because there were two of each) with names of vice presidents who were never elected president (e.g., Hannibal Hamlin), other famous Americans (e.g., Patrick Henry), and other names that we selected from various sources (e.g., Thomas Moore). Altogether, we gave Amazon Mechanical Turk (MTurk) subjects 123 names (41 presidents, 82 nonpresidents) and asked them to recognize the names belonging to each president by clicking PRESIDENT or NOT PRESIDENT. After this judgment, they rated their confidence in the decision on a 100-point scale with a slider that was placed at zero each time.

Our subjects recognized 88% of the actual presidents, and their overall false alarm rate to the lures was 9%. Thus, they exhibited good discriminability. The blue dots in the Figure 3 represent the presidents and the red diamonds represent the lures. As can be observed, a high correlation exists between confidence and accuracy in this task when identifying presidents (r = .93). However, subjects did make mistakes. Surprisingly, Alexander Hamilton was "recognized" as president by 71% of the subjects; thus, as high or higher than for five actual presidents such as Warren Harding and Martin Van Buren. In addition, confidence in this erroneous rating for Hamilton was high, at over 80%. This study was conducted before the musical *Hamilton* appeared on Broadway and before the controversy about possibly removing Hamilton from the \$10 bill had arisen. We surmised that Hamilton's name was famous from history

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*Note.* The correlation between accuracy and confidence for presidents is generally high, although some errors occurred. Alexander Hamilton, Hubert Humphrey, Benjamin Franklin, and John Calhoun were "recognized" as president by over 35% of participants. From "Recognizing the Presidents: Was Alexander Hamilton President?" by H. L. Roediger and K. A. DeSoto, 2016, *Psychological Science*, 27, p. 647. Copyright 2016 by Sage Publishing Co. Reprinted with permission. See the online article for the color version of this figure.

books and from appearing on money, and yet our subjects did not appear to know what he had done. Thus, because the name was familiar and fluent in the context of American history, our subjects attributed this fame to his having been president (see Jacoby et al., 1989, for a similar effect in recently learned names). Hamilton appears to be what Koriat (2008) has called a seductive lure, one that invites false recognition (see too DeSoto & Roediger, 2014). Names of several other famous Americans were falsely recognized as president by over 35% of subjects—Hubert Humphrey (45%), Benjamin Franklin (39%), and John Calhoun (37%), although these errors were made with lower confidence.

To return to our main point, one aspect of collective memory is as a body of knowledge. However, this point turns out to be more complicated than it seems on the surface. People may have different knowledge bases, especially across generations with other knowledge remaining relatively stable. The results in Figure 1 show both patterns; the recency effect in recall differs widely across generations, yet the recall of presidents from Washington to Coolidge remains remarkably constant across generations. Further, errors may creep into the body of knowledge as when Alexander Hamilton is judged to have been a president by a large proportion of people, and with high confidence. To read more about this line of research, see a recent review by DeSoto and Roediger (2019).

### **Collective Memory as an Attribute of a People**

A second aspect of collective memory is "the distinctive holistic image of the past of the group, an image which may itself be used as a definer of the group" (Dudai, 2002, p. 51). At the national level, many countries have an origin story about how the nation began. The memory encapsulated by this narrative is often highly selective, emphasizing positive aspects and omitting negative features and episodes. Ernst Renan (1982/2018) in his essay on "What is a nation?" argued that what defines a nation is in large part its collective memories. That is, nations are often composed of people speaking different languages, practicing various religions, as well as being of different races. None of these could define a nation, but "a rich legacy of memories" was surely a part of the nation's origin story. Renan further argued that this legacy of memories should be selective, emphasizing the positive for the sake of national cohesion. He wrote "Forgetting, I would even go so far as to say, historical error, is a crucial factor in the creation of a nation, which is why progress in historical studies often constitutes a danger for [the principle of] nationality" (p. 250). The reason is, of course, that historians will report the more complete record of atrocities and other negative acts committed in the creation of the nation, ones that adherents of a strong nationalism would prefer to forget.

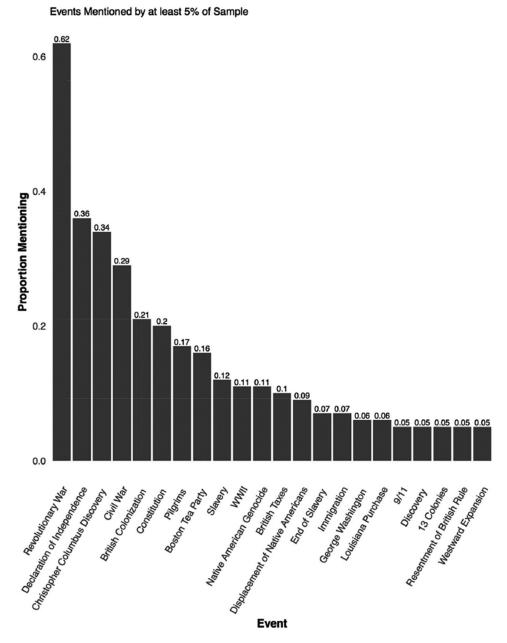
In the United States, as in many countries, this tension over how to remember the past plays out in how history books, used to inculcate the nation's story in the minds of young people, should be written. United States history textbooks, which must be approved by state and local school boards, have traditionally been a triumphant tale of the building of America and its upward trajectory toward greatness. Historians often criticize these books because the story they tell is so lopsidedly positive, omitting or minimizing negative aspects of America's story, such as the genocide of Native Americans through war, disease, and broken treaties, or slavery and its legacies in the slow movement toward civil rights for Blacks. In three editions of his book Lies My Teacher Told Me, James Loewen (1995, 2007, 2018) examined how history is presented in 12 high school history textbooks (in the first edition) and several more in later editions. He documented the curious elisions and misrepresentations in these books. Through his and others' criticisms, the books have become somewhat more accurate over time, but as this change has occurred so has pushback from school boards and other overseers of how history is taught. These people prefer the positive collective memory of America's founding with a minimization of negative events. Again, memory and history are in conflict. As historian Pierre Nora (1989) has argued, "Memory and history, far from being synonymous, appear now to be in fundamental opposition. ... History is perpetually suspicious of memory, and its true mission is to suppress and destroy it" (pp. 8–9).

## ROEDIGER

How do current Americans envision America's founding? Yamashiro et al. (2019) asked 2,000 Americans about their origin story. The specific question they asked about the past was: "What are the origins of America? List the top five most important events that brought about America as a nation" (p. 1160). People were also asked to rate each event as positive or negative. The outcome showed that the events people recalled about America's origins were mostly highly positive. They included the Pilgrims' landing, the Revolutionary War, the Declaration of Independence, and the Constitution, among others. Figure 4 shows a listing of events participants provided that had at least 5% agreement. The list indicates a wide diversity of events that Americans consider "foundational." It also reveals that no wide agreement exists about the foundational events. The Revolutionary War was the most agreed upon event, yet it was nominated

#### Figure 4

Events Mentioned by at Least 5% of the Sample Naming America's Foundational Events



*Note.* From "American Origins: Political and Religious Divides in U.S. Collective Memory," by J. K. Yamashiro, A. Van Engen, and H. L. Roediger, 2019, *Memory Studies*. Copyright by Sage Publishing Co. Reprinted with permission.

by just 62% of people. The next most nominated event, the Declaration of Independence, was nominated by only 36%. Although some have implied that a country has a single origin story, the results here seem to indicate several origin stories, as discussed next.

Yamashiro et al. (2019) also asked their participants about their political learnings and about their religious affiliations. Although the distributions of these various features were overlapping, in general people who were conservative, religious (Protestant or Catholic) and Republican tended to list how America began with the arrival of Pilgrims or Puritans or Columbus, events with (for them) positive connotations and a religious origin, of bringing Christianity to America. On the other hand, liberals/not religious/Democrats tended to begin their listings with later and more secular events, such as the signing of the Declaration of Independence or the creation of the Constitution. In addition, even though mention of negative events was low overall, this latter group was more likely to mention negative events such as genocide of Native Americans and importation of slaves and slavery in their listings. Thus, although both groups generally had positive origin stories for the United States as indicated by their listing of events, secular/Democratic individuals were more likely to list negative events whereas these events tended to be omitted by religious/Republican respondents.

The findings of Yamashiro et al. (2019) agree with distinctions made by Moscovici (1988) and others that even people growing up in the same general culture may, due to the subculture in which they exist, form different mental representations of the history of their country. From a variety of material that exists for an origin story, the representation achieved may differ considerably depending on the selection of events that form the story. Wertsch (2021) points out that the narrative schemas that represent origin stories or historical charters (Liu et al., in press) are often implicit and unconscious, in the sense that they are accepted and not even brought to conscious consideration unless they are challenged by proponents with a different viewpoint. This tacit knowledge of our origins is often carried forward across generations.

In a related study using the same data set, Yamashiro and Roediger (2019) compared the characteristics of the five events of America's founding with events from a question about America's future. Participants were asked to envision and list, within 1 min, all of the positive events they imagined happening in America's future, and all of the negative events, with positive and negative cues counterbalanced. This retrieval fluency task, from which we can calculate a measure of emotional bias in collective future thought (Szpunar & Szpunar, 2016), showed a strong negative cast. Negative events were more accessible than positive events. Taking the past events and future projections together, Americans showed a downward trajectory, as if the country were moving from a glorious past to a more dystopian future, in agreement with other results (Shrikanth et al., 2018). Surprisingly, no subgroup of participants in terms of religion or political affiliation produced a trajectory of national progress in their representations of the nation across time. Even those people who endorsed the idea of the United States as a "city on a hill" (Van Engen, 2020), as a beacon to democracy and freedom, had negative projections for the country's future. This outcome seems odd for a nation that is often portrayed as always moving forward. For example, President Obama, in his farewell address (Obama, 2016), remarked that "... the long sweep of America has been defined by forward motion, a constant widening of our founding creed to embrace all, and not just some." Yet, when Americans are asked to think about possible concrete events in the future of the country, they skew to the negative. The same is true of British people, as well as Canadian and French groups.

## **Collective Memory as a Process**

The third aspect of collective memory, process, might better be put in the active form discussed near the outset of the article: collective remembering. *Remembering* connotes the activity involved in constructing and changing collective memory. The controversies in U.S. high schools and school boards today about how history is taught is a good example. Should the purpose of history be to present an uplifting narrative of continual improvement and progress, so as to create good, patriotic citizens? The mission here is to have students imbibe a positive collective memory of their country and its achievements. Or should U.S. history be portrayed as accurately as possible, with negative events as well as positive events covered in the course (Loewen, 2018)?

The debate over how the Enola Gay exhibit should represent dropping of the atomic bombs on Japan is another such controversy. In fact, many such debates exist in the United States and around the world. For example, the slaughter of many Armenians by Ottoman soldiers during World War I is an event called "the Armenian genocide" by much of the world, but many modern Turks resist that label. At this writing, President Biden is finally saying—over a century after the fact—that the events were in fact genocide (Rogers & Gail, 2021). President Erdogan of Turkey was angered by the news, according to press accounts, as were many Turks.

Another memory controversy, one of which most Americans are unaware, concerns the credit for the Allied victory in World War II. The Allied forces defeated the Axis forces, primarily Germany, Japan and Italy. But which Allies were most important? Most Americans answer this question quickly and with confidence by saying that the United States was, for the both the European and Pacific theaters of the war. Considering the European theater, the typical narrative Americans learn goes as follows: *European countries were at war, and Germany and Italy were the primary aggressors. The fight seemed a stalemate, or if anything, the Allies were gradually losing. Then the U.S. entered the war, and on June 6,*  1944, their troops, with those of other countries, attacked on the beaches of Normandy. After fierce fighting, Americans created a beachhead and pushed inward. Paris was soon liberated, and then the U.S. invaded Germany and soon the war was over. The U.S. won the war! Some version of the preceding story is ingrained in U.S. history books, novels, movies and at the World War II Museum in New Orleans. For the 75th anniversary of D-Day in 2019, *Time* magazine produced a special issue called "D-Day: 24 Hours That Saved the World" (Time, 2019).

Did the United States win the war in Europe? Wertsch (2002) has described how people in countries of the former Soviet Union have a completely different narrative for the Allied victory of World War II, one in which the Soviet Union is primarily responsible for victory. When asked to list primary events of the war, Russian high school students could reel off many events, but most of them are unknown to U.S. high school students (e.g., the Battle of Kursk, which was the largest tank battle in history). I will return to the Soviet version of the war below. When Zaromb et al. (2014) surveyed both U.S. college students and older adults who had been alive during the war, they found that the list of events produced by people in the U.S. list did not overlap with the one that Wertsch obtained from Russian students. So, even though the Soviets and the United States were allies in the war, they seem to have almost completely different views on how the war in Europe was won and which country was responsible.

These disparate views of World War II led us to a largescale study of knowledge and opinions about the war from over 100 people in each of 11 countries: the United States and Russia (as a proxy for the Soviet Union), as well as six other allies: Australia, Canada, China, France, New Zealand, and the United Kingdom (Abel et al., 2019; Roediger et al., 2019). The study also included the Axis countries of Germany, Italy, and Japan. The survey used a snowball sampling technique, such that the first people recruited were asked to recruit others, and the researchers contacted many people in some of the countries asking for help. Thus, random sampling was not used. Another possible drawback is that all the survey questions were asked in English for people of all countries, and the results might be skewed. However, we have replicated some of the results with student samples, testing subjects in their native language, and the results are highly similar to those we obtained previously (Roediger et al., 2019).

We gave people in the 11 samples two general knowledge tests about the war. One was a multiple-choice test and the other one asked people to recognize events from World War II from among other events, some from World War I (the Battle of the Marne) and others that were invented by the authors (e.g., the Battle of Sydney). Russians scored better on both tests of knowledge than did people from any other country. Russians take pride in what they call The Great Patriotic War, and it is thoroughly taught in their schools.

We also asked people to list the 10 most important events in World War II. We received many responses, but we decided to use a criterion of 50% agreement of people within a country to create the list of events in Figure 5. The reason for this criterion was to enable comparison of memory representations of the past shared by the majority of the people. The figure shows events unique to each country (and meeting the 50% criterion) in red, and we can see that all events in the Russian column, except one, is unique. The exception listed by the Russians is what people in the United States called D-Day, and Russians even have a different name for the event. They call it the Opening of the Second Front. In their view, Russians had been carrying the war against Germany since 1941, so the opening of the second front (D-Day) caused Germany to move troops from the eastern to the western front. This step relieved some pressure on the Soviet forces in the east, and the Soviet troops made faster progress in the final assault on Berlin, causing Hitler to capitulate. Thus, in the Soviet/Russian view, their troops won the war in Europe, whereas the United States and other allies played a supporting role. Examination of Figure 5 shows, however, that the other nine countries listed events more in line with the American view of the war rather than the Russian view. Even Chinese people retrieved events more like Americans and not like Russians. In addition to D-Day, Pearl Harbor and the atomic bombs were indeed remembered by the majority of participants from all other countries (except Russia).

Roediger et al. (2019) asked more directly about our participants' opinions for the responsibility of various countries in winning in the war, and we asked the question in several different ways. For Allied countries, we first asked, "In terms of percentage, what do you think was [your country's] contribution to the victory of World War 2? In other words, how responsible was [your country] for the victory of the war?" The results in answering this question can be seen for each country in the far-left bars of Figure 6, which shows the average percentage given by people from each of eight Allied countries. Three Allied countries claimed greater than 50% responsibility for winning the war: Russia at 75%, the United States at 54% and the United Kingdom at 53%, with other allies providing smaller percentages. The total from these eight countries, just a fraction of the allied countries involved in the war, came to 307%, a rather startling overclaiming of responsibility for victory in the war. As John F. Kennedy told a reporter after the failed Bay of Pigs invasion, "Victory has a hundred fathers but defeat is an orphan."

We next asked the question a second way in the survey: "In terms of percentage, how much do you think each of the following countries contributed to the Allied victory of World War 2?" Participants saw 9 boxes into which they were to place a percentage, 8 for the countries included in our sample and another box for "other" countries. The total for all the boxes had to add to 100% before the survey would move to

Figure 5 Core Events, Shared by  $\geq$  50% of Participants in Each Country

Australia	Canada	China	France	NZ	Russia	UK	USA	Germany	Italy	Japan
Attack on Pearl Harbor 77%	Attack on Pearl Harbor 78%	Attack on Pearl Harbor 75%	D-Day 90%	Attack on Pearl Harbor 81%	Battle of Stalingrad 93%	D-Day 75%	Attack on Pearl Harbor 91%	German Invasion of Poland 71%	Atomic Bombings 87%	Atomic Bombings 88%
Atomic Bombings 67%	D-Day 75%	Atomic Bombings 55%	Holocaust 72%	Atomic Bombings 73%	Battle of Kursk 73%	Attack on Pearl Harbor 67%	D-Day 81%	Holocaust 68%	D-Day 75%	Attack on Pearl Harbor 74%
Holocaust	Holocaust	D-Day	Atomic Bombings	Holocaust	D-Day	Holocaust	Atomic Bombings	D-Day	Holocaust	
58%	67%	53%	62%	61%	66%	59%	80%	62%	68%	
D-Day 54%	Atomic Bombings 66%		Attack on Pearl Harbor 52%	D-Day 60%	Siege of Leningrad 65%	Battle of Britain 59%	Holocaust 66%	Atomic Bombings 59%	Attack on Pearl Harbor 66%	
German Invasion of Poland 50%			De Gaulle's Appeal 50%	German Invasion of Poland 50%	Battle of Moscow 64%	Atomic Bombings 58%		Attack on Pearl Harbor 50%		
					German Invasion of USSR 60%	German Invasion of Poland 54%				
					Battle of Berlin					
					57%					

*Note.* Each core event that is shared in more than one country has a specific color code (e.g., green indicates D-Day); core events that are unique to a specific country and not shared by any of the other countries are highlighted in red. From "Collective Memories Across 11 Nations for World War II: Similarities and Differences Regarding the Most Important Events" by M. Abel, S. Umanath, B. Fairfield, M. Takahashi, H. L. Roediger, and J. V. Wertsch, 2019, *Journal of Applied Research in Memory and Cognition*, *8*, p. 182. Copyright Sage Publishing Co. Reprinted with permission. See the online article for the color version of this figure.

the next question. The results are shown in the middle column of Figure 6, and it is apparent that people in almost all the countries greatly moderated their percentage estimate. However, there was one notable exception. Russians dropped their estimate from 75% to 64%. They still regarded their effort as far higher than that of any other country.

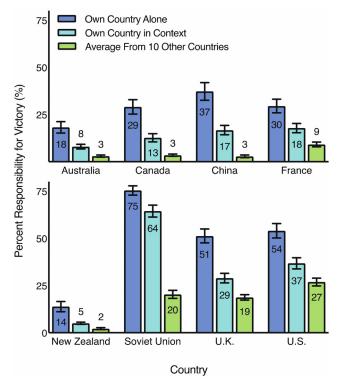
We then calculated percentage effort in a third way. This time, we averaged the percentage of responsibility of each country for winning the war as made by people in the other ten countries (seven Allied, three Axis), omitting that country's own people. So, for France, the rankings from people of 10 other countries, over a thousand in all, but omitting rankings by the French, were used. These figures are in the rightmost column for each country in Figure 6. Now we can see that the estimates are much more modest, totaling 86% (with the remainder going to the missing country and to other). The contribution of the Soviet Union dropped to 20% as estimated by the people of other countries, much lower than the Russians' own estimate. In fact, the United States estimate of 24% when measured this way was larger than that of the Soviet Union at 20%, and the difference was statistically significant.

Who is right? Which country had the greater claim for winning the war, the United States or the Soviet Union? Obviously, there is no easy answer. However, at least in Europe, the Soviets fought from 1941, when their country was invaded, until August, 1945, when Germany surrendered. The United States fought in Europe proper from September 3, 1943, when Italy was invaded, to the end of the war. Thus, the Soviets fought about two more years than the United States or other allies on the ground in Europe.

We can also look to war casualties to ask which country bore the greater burden. According to data posted by the World War II Museum in New Orleans, 416,800 U.S. soldiers died in the war, and another 1,700 U.S. civilians died. (These include deaths in both the European and Pacific theaters of the war.) Soviet military deaths in the war totaled around 9,700,000 (an estimate by taking the midpoint of the range of deaths; no one knows for sure). In addition, about 14,000,000 civilians died. The Soviet Union took incredibly heavy casualties defending their country in the battles of Stalingrad, Moscow, Kursk, and the Siege of Leningrad, as well as in their long push to capture Berlin. Thus, when people of the former Soviet Union claim to have largely won the war in Europe, they may have a point, although yes, forces from many other countries also played a role. Certainly, though, the United States and other countries dominated the Allied victory in the

## Figure 6

Allied Contribution to the War Effort as Estimated by Citizens of Allied Countries



*Note.* Perceived percent contribution to the war effort is depicted for eight former Allied countries. Ratings of each country's contribution to victory were provided by (a) participants concerning their own country's contribution (purple), (b) participants concerning their own country's contribution when asked in the context of seven other Allied contributions (light blue), and (c) when participants in 10 other former Allied and Axis countries rated each country's contribution (green). Error bars represent 95% confidence intervals. From "Competing National Memories of World War II" by H. L. Roediger, M. Abel, S. Umanath, R. A. Shaffer, B. Fairfield, M. Takahashi, & J. V. Wertsch, 2019, *Proceedings of the National Academy of Sciences, 116*, p. 16680. Copyright by the National Academy of Sciences. Reprinted with permission. See the online article for the color version of this figure.

Pacific theater. Note that Russians did not list one event from that theater of the war in Figure 5. Why? It did not involve the Soviet Union until the last few days of the war.

Even though the Soviet Union played a critical role in World War II, when we asked people of other countries to provide a list of the most critical events, their lists resembled the list of U.S. events (with the attack on Pearl Harbor, Dday, and other events) and not the list of Soviet events (see Figure 5). This remarkable finding may indicate the United States dominance in media such as movies and books about the war, items that circulate widely in other countries. In his book *Nothing Ever Dies: Viet Nam and the Memory of War*, Viet Thahn Nguyen wrote that "All wars are fought twice, once on the battlefield and once in memory" (Nguyen, 2016, p. 4). The Soviet Union may have been largely responsible for winning the war in Europe, but the United States has apparently won the war in collective memory, at least in the countries we surveyed.

#### Conclusion

Collective memory is a new arena of study for cognitive and social psychologists. One benefit of its study is helping people in one group understand the perspective of those in another group with which it is at odds. Three facets of collective memory that are essential for any group are as a body of knowledge, an image of a people, and as a process, a continual renegotiation of how events are to be remembered. The body of knowledge is not static, as the continuing change in how recent presidents are remembered exemplifies. The image of a people often involves an origin story-how did my group begin?and the study of how Americans remember founding events of their people illustrates similarities and differences among groups within the United States. Finally, collective memory as a process often involves "memory wars" or at least strong disagreements over how the past is to be remembered. The study of these aspects of collective memory is just beginning. Social scientists and humanists are working together, each using their own research tools, to gain greater understanding of how collective memory operates across the world, in different countries, different societies, and different ethnic groups. The future of the discipline is exciting.

#### References

- Abel, M., Umanath, S., Fairfield, B., Takahashi, M., Roediger, H. L., & Wertsch, J. V. (2019). Collective memories across 11 nations for World War II: Similarities and differences regarding the most important events. *Journal of Applied Research in Memory & Cognition*, 8(2), 178–188. https://doi.org/10.1016/j.jarmac.2019.02.001
- Assman, J. (1997). Moses the Egyptian: The memory of Egypt in Western Monotheism. Harvard University Press.
- Assmann, J. (2018). The invention of religion: Faith and covenant in the book of exodus. Princeton University Press, https://doi.org/10.23943/ 9781400889235
- Baddeley, A., Eysenck, M. W., & Anderson, M. C. (2020). *Memory* (3rd ed.). Routledge. https://doi.org/10.4324/9780429449642
- Bartlett, F. C. (1932). Remembering: A study in experimental and social psychology. Cambridge University Press.
- Blake, C. (1955). Can history be objective? *Mind*, *LXIV*(253), 61–78. https://doi.org/10.1093/mind/LXIV.253.61
- Blight, D. W. (in press). Europe in 1989, the U.S. in 2020, and the death of the lost cause. In H. L. Roediger & J. W. Wertsch (Eds.), *National mem*ory: Constructing identity in populist times. Oxford University Press. Brokaw, T. (1998). The greatest generation. Random House.
- Coman, A., Momennejad, I., Drach, R. D., & Geana, A. (2016). Mnemonic convergence in social networks: The emergent properties of cognition at a collective level. *Proceedings of the National Academy of Sciences of the United States of America*, 113(29), 8171–8176. https://doi.org/10 .1073/pnas.1525569113
- Corning, A., & Schuman, H. (2015). Generations of collective memory. University of Chicago Press. https://doi.org/10.7208/chicago/978022628 2831.001.0001

- Corning, A., & Schuman, H. (in press). From hero to villain: Stability and change in popular beliefs about Christopher Columbus. In H. L. Roediger & J. W. Wertsch (Eds.), *National memory: Constructing identity in populist times*. Oxford University Press.
- Crowder, R. G. (1993). Short-term memory: Where do we stand? *Memory* & Cognition, 21(2), 142–145. https://doi.org/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. https://doi .org/10.1177/0956797613516149
- DeSoto, K. A., & Roediger, H. L., III. (2019). Remembering the presidents. *Current Directions in Psychological Science*, 28(2), 138–144. https://doi.org/10.1177/0963721418815685
- Domjan, M. (2015). The principles of learning and behavior (7th ed.). Cengage Publishing Company.
- Dudai, Y. (2002). Memory from A-Z. Oxford University Press.
- Dudai, Y. (in press). Persistence of national core memory over 3000 years: The case of ancient vs. modern Israel. In H. L. Roediger & J. W. Wertsch (Eds.), *National memory: Constructing identity in populist times*. Oxford University Press.
- Erll, A. (2011a). *Memory in culture*. Palgrave Macmillan. https://doi.org/ 10.1057/9780230321670
- Erll, A. (2011b). Travelling memories. Parallax, 17(4), 4–18. https://doi .org/10.1080/13534645.2011.605570
- Fu, M., Xue, Y., DeSoto, K. A., & Yuan, T. F. (2016). Remembering the leaders of China. *Frontiers in Psychology*, 7, 373. https://doi.org/10 .3389/fpsyg.2016.00373
- Halbwachs, M. (1992). On collective memory (L. A. Coser, Trans.). University of Chicago Press. (Original work published 1925) https://doi.org/ 10.7208/chicago/9780226774497.001.0001
- Hirst, W., & Manier, D. (2008). Towards a psychology of collective memory. *Memory*, 16(3), 183–200. https://doi.org/10.1080/09658210701811912
- Hirst, W., Yamashiro, J. K., & Coman, A. (2018). Collective memory from a psychological perspective. *Trends in Cognitive Sciences*, 22(5), 438–451. https://doi.org/10.1016/j.tics.2018.02.010
- Hunt, R. R., & Lamb, C. A. (2001). What causes the isolation effect? Journal of Experimental Psychology: Learning, Memory, and Cognition, 27(6), 1359–1366. https://doi.org/10.1037/0278-7393.27.6.1359
- 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(2), 115–125. https://doi.org/10.1037/0096-3445.118.2.115
- Koriat, A. (2008). Subjective confidence in one's answers: The consensuality principle. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 34(4), 945–959. https://doi.org/10.1037/0278-7393.34.4.945
- Linenthal, E. T., & Engelhardt, T. (1996). *History wars: The Enola gay* and other battles for the American past. Metropolitan Books.
- Liu, J. H., Choi, S. Y., Zhang, R. J., Vilar, R., & Hakim, M. A. (in press). Social representations of history, living historical memory, and historical charters: Refining collective memory towards a theory of political culture change. In H. L. Roediger & J. W. Wertsch (Eds.), *National memory: Identity in popululist times*. Oxford University Press.
- Loewen, J. (1995). Lies my teacher told me. The New Press.
- Loewen, J. (2007). Lies my teacher told me. The New Press.
- Loewen, J. (2018). Lies my teacher told me. The New Press.
- Meier, B. (2021). Collective memory for political leaders in a collaborative government system: Evidence for generation-specific reminiscence effects. *Memory & Cognition*, 49(1), 83–89. https://doi.org/10.3758/ s13421-020-01076-8
- Moscovici, S. (1988). Notes towards a description of social representations. *European Journal of Social Psychology*, 18(3), 211–250. https:// doi.org/10.1002/ejsp.2420180303
- 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. https://doi.org/10.1037/a0021998

- Nguyen, T. V. (2016). Nothing ever dies: Viet Nam and the memory of war. Harvard University Press.
- Nora, P. (1989). Between memory and history: Les Lieux de Mémoire. *Representations*, 26, 7–24. https://doi.org/10.2307/2928520
- Novick, P. (1988). That noble dream: The 'objectivity question' and the American historical profession. Cambridge University Press. https://doi .org/10.1017/CBO9780511816345
- Obama, B. (2016). *Farewell address*. Retrieved from https://www.obama library.gov/sites/default/files/uploads/documents/President%20Obamas %20Farewell%20Address%20%28TRANSCRIPT%29.pdf
- Olick, J. K. (1999). Collective memory: The two cultures. *Sociological Theory*, *17*(3), 333–348. https://doi.org/10.1111/0735-2751.00083
- Olick, J. K., Vinitsky-Seroussi, V., & Levy, D. (2011). The collective memory reader. Oxford University Press.
- Pennebaker, J. W., Paez, D., & Rime, B. (1997). Collective memory of political events. Routledge.
- Rajaram, S., & Maswood, R. (2018). Collaborative memory: A selective review of data and theory. In J. H. Byrne (Ed.), *Learning and memory:* A comprehensive reference (2nd ed.). Academic Press.
- Renan, E. (2018). What is a nation? In M. F. N. Giglioli (Ed.), What is a nation? And other political writings (pp. 247–263). Columbia University Press. (Originally published in 1882) https://doi.org/10.7312/ rena17430-013
- Roediger, H. L., III, & Crowder, R. G. (1976). A serial position effect in the recall of United States presidents. *Bulletin of the Psychonomic Society*, 8(4), 275–278. https://doi.org/10.3758/BF03335138
- Roediger, H. L., III, Meade, M. L., Gallo, D. A., & Olson, K. R. (2014). Bartlett revisited: Direct comparison of repeated reproduction and serial reproduction techniques. *Journal of Applied Research in Memory* & *Cognition*, 3(4), 266–271. https://doi.org/10.1016/j.jarmac.2014.05 .004
- Roediger, H. L., III, & DeSoto, K. A. (2014). Forgetting the presidents. Science, 346, 1106–1109. https://doi.org/10.1126/science.1259627
- Roediger, H. L., III, & DeSoto, K. A. (2016). Recognizing the presidents: Was Alexander Hamilton president? *Psychological Science*, 27(5), 644–650. https://doi.org/10.1177/0956797616631113
- Roediger, H. L., III, Abel, M., Umanath, S., Shaffer, R. A., Fairfield, B., Takahashi, M., & Wertsch, J. V. (2019). Competing national memories of World War II. *Proceedings of the National Academy of Sciences of the United States of America*, 116(34), 16678–16686. https://doi.org/10 .1073/pnas.1907992116
- Rogers, K., & Gail, C. (2021, April 25). Breaking with predecessors. Biden Declares Mass Killing of Armenians a Genocide (Section A, p. 15). *New York Times*. https://www.nytimes.com/2021/04/24/us/politics/armenia-genocide-joe -biden.html
- Schmidt, C. R., Schmidt, S. R., & Wilson, K. A. (2021). Distinctiveness and priority in free recall of words. *Memory*. 29(1), 21–38. https://doi .org/10.1080/09658211.2020.1841794
- Shrikanth, S., Szpunar, P. M., & Szpunar, K. K. (2018). Staying positive in a dystopian future: A novel dissociation between personal and collective cognition. *Journal of Experimental Psychology: General*, 147(8), 1200–1210. https://doi.org/10.1037/xge0000421
- Szpunar, P., & Szpunar, K. K. (2016). Collective future thought: Concept, function, and implications for collective memory studies. *Memory Studies*, 9(4), 376–389. https://doi.org/10.1177/1750698015615660

Time. (2019). D-Day: 24 hours that save the world.

- Tulving, E. (1972). Episodic and semantic memory. In E. Tulving & W. Donaldson (Eds.), Organization of memory (pp. 382–4020). Academic Press.
- Van Engen, A. (2020). City on a hill: A history of American exceptionalism. Yale University Press. https://doi.org/10.2307/j.ctvwcjf0t

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- Wertsch, J. V. (2002). Voices of collective memory. Harvard University Press.
- Wertsch, J. V. (2021). How nations remember: A narrative approach. Oxford. https://doi.org/10.1093/oso/9780197551462.001.0001
- Wertsch, J. V., & Roediger, H. L., III. (2008). Collective memory: Conceptual foundations and theoretical approaches. *Memory*, 16(3), 318–326. https://doi.org/10.1080/09658210701801434
- Wixted, J. T., & Ebbesen, E. B. (1991). On the form of forgetting. *Psychological Science*, 2(6), 409–415. https://doi.org/10.1111/j.1467-9280.1991.tb00175.x
- Yamashiro, J. K., & Roediger, H. L., III. (2019). How we have fallen: Implicit trajectories in collective temporal thought. *Memory*, 27(8), 1158–1166. https://doi.org/10.1080/09658211.2019.1635161
- Yamashiro, J., Van Engen, A., & Roediger, H. L. (2019). American origins: Political and religious divides in U.S. collective memory. *Memory Studies*. Advance online publication. https://doi.org/10.1177/17506980 19856065
- Zaromb, F., Butler, A. C., Agarwal, P. K., & Roediger, H. L., III. (2014). Collective memories of three wars in United States history in younger and older adults. *Memory & Cognition*, 42(3), 383–399. https://doi.org/ 10.3758/s13421-013-0369-7

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