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Collective memories serve similar functions to autobiographical memories

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ABSTRACT

People from the same country often hold shared, culturally-shaped memories about important events from that country's history, known as collective memories. Although empirical research has started to shed light on the properties of these memories, none has systematically examined the functions these memories. To what extent do collective memories serve functions? We hypothesised that collective memories serve functions for a collective similar to those that autobiographical memories serve for individuals—directive, identity, and social functions. We conducted two experiments using adapted versions of the Thinking About Life Experiences questionnaire (TALE) in which we asked people to rate the functions of their collective memories. Across both experiments, we found evidence that collective memories serve directive, identity, and social functions for the collective. These results suggest collective memories perform important roles in their collectives.

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Collective memory; Memory functions; Autobiographical memory; Nationally relevant memories

If you were to ask Americans about important events from their country's history, you would probably find a remarkable amount of overlap in their answers (Choi et al., 2021; Taylor et al., 2017). In fact, work from history, sociology, anthropology, and political science demonstrates that people from the same country often hold shared memories of important events from that country's history (Bodnar, 1994; Cole, 2001; Zerubavel, 2003). In a similar way, family, social, and religious groups can hold shared memories of important events from their group's past (Wilson, 2005). These "collective memories" are part of a broader set of schemas, beliefs, and views that groups hold about their collective past (Dudai, 2002). However, these memories are not simply accurate, objective accounts of past events. Instead, they are biased and often emotionally-charged accounts of the past that can be shaped by a complex combination of political, social, and cultural factors (Hirst & Manier, 2008; Wertsch & Roediger, 2008). Across the world, collective memories regularly feature in conversations, jokes, and formal education, and are often transmitted from one generation to the next (Svob et al., 2016). But what makes these memories worthy of this amount of time and attention? For a full understanding of collective memories, we need to understand not only their characteristics, but what purpose and benefits they might provide to the groups who hold them (Baddeley, 1988; Bruce, 1985; Neisser, 1978).

At the most basic level, there are reasons to expect collective memories might serve functions—that is, they might confer adaptive evolutionary advantages that boost the survival and reproductive chances of the groups who hold them. For instance, theoretical accounts of collective memories suggest they play an important role in forming and maintaining the identity of a collective and in fostering a sense of belonging and connection within a group (Hirst & Manier, 2008; Wertsch & Roediger, 2008). Collective memories can do so both by demonstrating continuity in the group's actions or values over time and by highlighting how certain events led to change within the group. This sense of belonging encourages co-operation and helps a group harness the power of safety in numbers (Aronson, 1999). In addition, collective memories might provide a framework that guides decision making in the group (Abel et al., 2018; Pillemer, 1992). In ancient Rome, for example, the collective memory of the city being sacked by Gauls in the third century B.C.E. was described as giving Romans "nightmares which lasted for centuries," and had lasting effects on Roman foreign policy (Rosenberger, 2003; Williams, 2001, p. 221). To the extent that collective memories such as this one provide valuable lessons that groups can learn from, those memories might confer survival benefits in the form of improved group decision making. Together, these theoretical accounts suggest that collective memories might serve adaptive functions. Yet, there is a lack of systematic

empirical work investigating this possibility—a gap we begin to address in the experiments reported here.

Despite the lack of empirical work on the particular functions of collective memories, there is an extensive literature on the functions served by personal autobiographical memories. This literature addresses the ways in which being able to remember and relive specific episodes might provide survival benefits over and above simply being able to recall general facts about the world. Much of this work suggests autobiographical memories serve three main adaptive functions that are remarkably similar to the theorised functions of collective memories discussed above (Bluck et al., 2005; Pillemer, 1992; but see Harris et al., 2014). First, autobiographical memories help people maintain a coherent sense of *identity* across time—a function that conceptually maps on to the theorised role that collective memories play in forming the identity of the collective (Conway & Pleydell-Pearce, 2000; Wilson & Ross, 2003). Second, autobiographical memories *direct* people's behaviour, a function similar to the theorised role collective memories play in group decision making (Pillemer, 2003). Third, autobiographical memories encourage *social* bonding with others by promoting intimacy, helping people illustrate a point, or eliciting empathy (Alea & Bluck, 2003; 2007; Pillemer, 1998). Although somewhat less intuitive, collective memories could serve a similar social function when shared between groups—for example, when two nations commemorate an event that was important to both nations, or when politicians harken back to previous examples of co-operation between nations. But discussions of these potential social functions of collective memories are sparse in the literature, and it remains unclear how often, if ever, collective memories serve social functions.

It would not be surprising to discover that autobiographical and collective memories serve similar functions. After all, collective memories have several properties that are similar in many ways to those of autobiographical memories. For example, Americans' collective memories for US Presidents show a similar pattern of forgetting to autobiographical memories (Roediger & DeSoto, 2014; Roediger & DeSoto, 2016). Specifically, more recent presidents tend to be remembered better than earlier ones, with a couple of exceptions: the first few presidents (Washington, Adams, Jefferson) are well-remembered, as are presidents who played a distinctive role in the history of the country, such as President Lincoln. These recency, primacy, and distinctiveness effects closely resemble those in autobiographical memory (Baddeley & Hitch, 1977; Schulster, 1989; von Restorff, 1933). In addition, collective memories are often distilled to a small number of important events, not unlike people's narratives of their own life story (Bartlett, 1932; McAdams, 2001; Wertsch, 2002; Zaromb et al., 2014). Finally, much like autobiographical memories, collective memories can become distorted, perhaps to help the group maintain a positive identity (Baumeister & Hastings, 1997;

D'Argembeau & Van der Linden, 2008). For example, shameful events perpetrated by a group are sometimes minimised or even removed entirely from that group's collective memory (Sahdra & Ross, 2007).

However, these three functions are not necessarily the only functions that collective memories may serve. For instance, there is evidence that collective memories can serve an important role in passing knowledge from one generation to the next—a function that might be especially prominent among older adults (Cordonnier et al., 2021; Mergler & Goldstein, 1983; Stone et al., 2014; Svob et al., 2016). Moreover, some have suggested that we need to be “cautious about drawing too heavily on individual processes as a model for collective memory” because the mechanisms that shape memories at the level of the individual person do not necessarily apply to memories at the level of the collective (Wertsch, 2002; see also Novick, 1999). As just one example, collective memories—unlike autobiographical memories—are often represented in books, films, and educational curricula (Wertsch, 2002). Because of these complex and decentralised storage mechanisms, collective memories are affected by social and political forces in ways that autobiographical memories are not. Collective memories may also be less prone to forgetting than autobiographical memories, which are “stored” in far fewer places—often only in the minds of the people who experienced them. These differences in mechanisms highlight the problems with assuming autobiographical memories and collective memories operate in the same ways.

Nonetheless, adapting measures of autobiographical memory functions allows us to put the functions of collective memories into context by comparing these functions to those served by autobiographical memories. For example, there are reasons to expect collective memories might serve functions less frequently than autobiographical memories. For one thing, many collective memories are of events people did not personally experience and that occurred long before they were alive. As a result, these memories would not necessarily be accompanied by rich episodic characteristics such as a sense of reliving—characteristics that are thought to be important for memories to serve functions (Alea et al., 2013; Pillemer, 1992). The idea is that episodic details provide useful information in and of themselves, and also act as memory cues that help a memory come to mind when it is needed (Schacter & Madore, 2016; Tulving, 1985). Consistent with this idea, there is evidence that people who have an impaired ability to mentally time travel back to past experiences tend to be worse at using their autobiographical memories to solve problems (Sheldon et al., 2011). These data do not mean, however, that collective memories cannot serve functions at all. In fact, work studying vicarious memories of events people did not experience suggests these memories can sometimes serve functions (Lind & Thomsen, 2018; Pillemer et al., 2015). In a similar way, collective memories might still serve functions, although perhaps

less often than autobiographical memories—at least to the extent that collective memories lack the episodic details that accompany many autobiographical memories.

Of course, it is essentially impossible to ask a collective directly about the functions of its memories. We instead must ask the individual people who make up the collective—people who are likely to have at least some insight into the identity and behaviour of their group—about the shared memories of the collective. For this reason, a logical initial approach is to ask people from a particular collective about the ways in which their collective memories serve functions for that collective. We could investigate many kinds of collectives—nations, families, religious groups, cultural groups, and myriad social groups all hold shared memories about their past (Wilson, 2005). The collective memories held by these groups are likely to differ in a variety of ways, such as how long ago the events happened, whether they were personally experienced, and how frequently they are discussed (Manier & Hirst, 2007). Here, we chose to investigate collective memories at the national level because it is possible at this level to recruit large samples of subjects who all share the same collective memories.

To do so, we created an initial measure for the functions of collective memories by drawing on the Thinking About Life Experiences questionnaire (TALE)—a commonly-used scale that asks people to report how often their autobiographical memories serve directive, identity, and social functions (Bluck & Alea, 2011). The TALE is a good candidate for such a measure because the constructs captured by its items fit with theoretical accounts of collective memory functions, and these items can be easily adapted to ask about the functions a collective memory serves for the group. For example, items could be adapted to capture a variety of ways collective memories might inform a sense of identity in the group—say, by conveying information about how the values in that group have changed over time. Items could also be adapted to capture different ways the group could use collective memories to guide their decisions, such as by thinking about past mistakes, and various situations in which the group might share the memory with other groups, such as when wanting to develop a closer relationship with another group. Of course, measures of collective memory functions that are based on models of autobiographical memory functions might not capture every function collective memories serve. But these measures nonetheless provide a theoretically-driven way of tapping into several key hypothesised functions of collective memories.

Therefore, across two experiments, we asked subjects to report the functions of important memories from their country's history. We then compared these reports to subjects' reports of the functions of their own autobiographical memories. In Experiment 1, we asked subjects about the functions served by their country's collective memories, in general. In Experiment 2, we made the task more concrete by asking subjects about the functions of

specific collective memories. Our results provide support for the hypothesis that collective memories serve directive, identity, and social functions—much like people's autobiographical memories.

Experiment 1

Our primary question in Experiment 1 was: how frequently do collective memories serve directive, identity, and social functions. To address this question, we adapted the TALE (Bluck & Alea, 2011), which measures how frequently autobiographical memories serve directive, identity, and social functions. The TALE has good psychometric properties (Bluck & Alea, 2011), and a factor structure that maps onto the three functions. In practice, the TALE generates three subscales, each producing a mean score. We created a "Collective TALE" to measure how frequently a country's collective memories serve directive, identity, and social functions for the people of that country. Subjects completed both the original TALE and the collective TALE so we could compare the functions of people's autobiographical and collective memories. This experiment was pre-registered, as was Experiment 2. The pre-registrations, materials, and data for the two experiments can be found on the Open Science Framework (<https://osf.io/rfjq3/>). These experiments were approved by the University of Waikato's School of Psychology Research and Ethics Committee under the delegated authority of the University's Human Research Ethics Committee, and by the Claremont McKenna College Institutional Review Board.

Methods

Subjects

We recruited workers from the United States and Canada on Amazon's Mechanical Turk platform through TurkPrime (Litman et al., 2017). Subjects participated in exchange for Amazon credit. We aimed to collect data until 300 subjects had completed the survey. Because of the way Mechanical Turk interacts with TurkPrime, 310 subjects completed the survey. According to our pre-registered criteria, we then excluded 19 subjects who failed one or both of the attention checks, leaving us with our final sample of 291 subjects. The mean age of these subjects was 41.15 ($SD = 13.29$, range 19-76), 110 of whom identified as men, 179 as women, and 2 as gender diverse. All but 5 subjects reported their primary language is English, all but 15 subjects grew up in the USA, and all but 5 reported they currently live in the USA. In addition, all but 16 subjects reported the country they most identify with is the USA.

Materials and procedure

Subjects completed both the original TALE and the Collective TALE, in counterbalanced order. Half the subjects saw the original TALE first, which is displayed in the left side of Table 1. The first part of this scale asks subjects two

Table 1. Items from the original (Bluck & Alea, 2011) and collective versions of the TALE.

Autobiographical Memory Version	Collective Memory Version
<i>Think and talk about items</i>	
In general, how often do you think back over your life?	In general, how often do people from your country think back over your country's history?
In general, how often do you talk to others about what's happened in your life?	In general, how often do people from your country talk to others about your country's history?
<i>Prompt</i>	
I think back over or talk about my life or certain periods of my life ...	People of my country tend to think back over or talk about certain periods of our history ...
<i>Identity Function Items</i>	
when I want to feel that I am the same person that I was before.	when we want to feel that our country is the same as it was before.
when I am concerned about whether I am still the same type of person that I was earlier.	when we are concerned about whether our country is still the same kind of place that it was earlier.
when I am concerned about whether my values have changed over time.	when we are concerned about whether our values have changed over time.
when I am concerned about whether my beliefs have changed over time.	when we are concerned about whether our beliefs have changed over time.
when I want to understand how I have changed from who I was before.	when we want to understand how we have changed from who we were before.
<i>Directive Function Items</i>	
when I want to remember something that someone else said or did that might help me now.	when we want to remember something that another country said or did that might help us now.
when I believe that thinking about the past can help guide my future.	when we believe that thinking about our country's past can help guide our future.
when I want to try to learn from my past mistakes.	when we want to try to learn from our past mistakes.
when I need to make a life choice and I am uncertain which path to take.	when we need to make an important choice and we are uncertain which path to take.
when I want to remember a lesson I learned in the past.	when we want to remember a lesson we learned in the past.
<i>Social Function Items</i>	
when I hope to also find out what another person is like.	when we hope to find out what another country is like.
when I want to develop more intimacy in a relationship.	when we want to develop a new relationship with another country.
when I want to develop a closer relationship with someone.	when we want to develop a closer relationship with another country.
when I want to maintain a friendship by sharing memories with friends.	when we want to maintain friendships with other countries by sharing memories with them.
when I hope to also learn more about another person's life.	when we hope to learn more about another country's history.

questions that broadly tap into how often they think back over and talk about their autobiographical memories. The second part asks subjects to complete 15 items about how often they think or talk about their autobiographical memories for various reasons, on a scale from 1 (almost never) to 5 (very frequently). Five of the items map on to the directive function (e.g., "when I want to remember a lesson I learned in the past"), five map onto the identity function (e.g., "when I want to feel that I am the same person that I was before"), and five about reasons that map onto the social function (e.g., "when I want to develop a closer relationship with someone"). We also included an attention check within this block ("when I want to this is not a real question please select Seldom").

These subjects then completed the Collective TALE we created (see the right side of Table 1). The items on this scale parallel those of the original TALE, adapted to ask about the functions a collective memory serves for the collective. The first part of the scale asks subjects two questions that broadly tap into how often people of their country think back over their country's history and how often they talk with people from another country talk about their own country's history. The second part asks subjects to complete 15 items about how often people of their country think back over or talk about periods of their history, once again on a scale from 1 (almost never) to 5 (very frequently). These items map onto those in the original TALE, with one exception: for the sake of intelligibility, we replaced the item "when I want to develop

more intimacy in a relationship" with "when we want to develop a new relationship with another country." As in the original TALE, we included an attention check within this block ("when we want to this is not a real question please select Often").

The other half of subjects completed the same two scales, but in the opposite order. Once subjects had completed both scales, we asked them to report their age and gender. Finally, we asked them to report their first and primary languages, where they grew up, where they currently live, and with which country they most strongly identify.

Results

Before turning to our primary research question, we first determined how often, in a general sense, people think and talk about their autobiographical and collective memories. To do so, we examined subjects' responses to the two broad items from the beginning of both the original and Collective versions of the TALE. As the top half of Table 2 shows, subjects reported that they think about their autobiographical memories moderately often, and that people of their country think about their country's history more often, $M_{diff} = 0.51$, 95% CI [0.38, 0.64]. Likewise, subjects reported they talk about their memories moderately often, and that people of their country talk about their country's history more often, $M_{diff} = 0.20$, 95% CI [0.06, 0.34]. Together, these results fit with the

Table 2. Subjects' ratings of how often they think and talk about their autobiographical and collective memories.

Rating	Autobiographical M (SD)	Collective M (SD)
Experiment 1		
Think about	3.27 (0.99)	3.78 (0.82)
Talk about	2.78 (0.94)	2.98 (0.95)
Experiment 2		
Think about	2.98 (1.05)	3.53 (0.98)
Talk about	2.82 (0.99)	2.61 (1.10)

idea that people often think and talk about collective memories.

We next checked the measurement properties of the Collective TALE and set out to determine if it showed the same factor structure as the original TALE. That is, we calculated Cronbach's alpha for each subscale and then conducted an exploratory factor analysis, assuming three factors. We used a Promax rotation because the literature on the functions of autobiographical memory clearly shows the three functions are correlated with one another (Bluck & Alea, 2011). We found that the three subscales had good reliability ($a_{directive} = 0.81$, $a_{identity} = 0.88$, $a_{social} = 0.82$). Furthermore, the results of the factor analysis (which can be found in the Supplemental Materials) showed that all but one of the items loaded as expected. One directive item unexpectedly loaded more strongly on the social factor than the directive factor ("when we want to remember something another country said or did that might help us now"). When this item is dropped from the analysis, the overall pattern does not change, so the analyses reported here use the item groupings from the original TALE—as we pre-registered. We also replicated the factor structure of the original TALE (see the Supplemental Materials).

Having established the Collective TALE has good measurement properties, we next turned to our main research question: How frequently do collective memories serve functions? To answer this question, we calculated, for each subject, three subscale scores for the Collective TALE—one for each function—as well as the corresponding subscale scores for the original TALE. Each subscale score was calculated by taking the mean of the five items that make up that subscale. These data are displayed in Figure 1. First, let us consider the right-hand side of the figure, which depicts the distribution of subjects' ratings of the functions of their collective memories. As the figure shows, subjects rated their country's collective memories as serving all three functions relatively frequently—particularly directive and identity functions (see the Supplemental Materials for comparisons between the three functions). These distributions support the hypothesis that collective memories serve identity, directive, and social functions for the collectives who hold them.

But recall that we hypothesised collective memories might serve functions less than autobiographical memories. Therefore, we next compared the functions served by collective memories to those served by autobiographical memories (displayed in the left-hand side of Figure 1).

We found that subjects reported their autobiographical memories serve directive and social functions to a greater degree than their country's memories do for the country, $M_{diff}(directive) = 0.15$, 95% CI [0.05, 0.25], $M_{diff}(social) = 0.29$, 95% CI [0.18, 0.40]. By contrast, subjects reported that their collective memories serve identity functions for their collective more than their autobiographical memories do for themselves, $M_{diff}(identity) = 0.42$, 95% CI [0.31, 0.53]. Given the differences in the wording of the scales, we are hesitant to draw strong conclusions from these differences. But taken together, our findings fit with the idea that collective memories serve directive, identity, and social functions.

One limitation of this experiment is that we asked subjects to report the functions of their collective memories as a whole. This task is highly abstract and requires subjects to think broadly about their country's history in a way that they normally might not. We addressed this limitation in Experiment 2 by making the task much more concrete—instead of asking subjects to think about their country's collective memories as a whole, we asked subjects instead about a specific event from their country's history. This latter approach is an extension of prior work that has investigated the functions of specific autobiographical memories (Hyman & Faries, 1992; Rasmussen & Berntsen, 2009). Such an approach also fits with work that has investigated the characteristics of collective memories by asking about specific memories (Roediger & DeSoto, 2016; Zaromb et al., 2014). If we found the same pattern as in Experiment 1, it would provide converging evidence that collective memories serve directive, identity, and social functions.

Experiment 2

In Experiment 2, we asked subjects about the functions of one specific collective memory. To do so, we selected five specific collective memories from the most important events Americans nominated when asked what historical events shaped their country's identity (Choi et al., 2021; Taylor et al., 2017). We randomly assigned each subject to read a brief summary of one of these events and then asked them to rate how frequently that memory serves directive, identity, and social functions for the country. We then compared these reports to subjects' reports of the functions of an important memory from their own life.

Methods

Subjects

We recruited workers US workers on Amazon's Mechanical Turk platform via TurkPrime (Litman et al., 2017). We again recruited subjects from the US because empirical work has identified the collective memories that are most important to people from the US (Choi et al., 2021; Taylor et al., 2017), and because we had access to a large enough sample there to reliably establish the measurement properties of

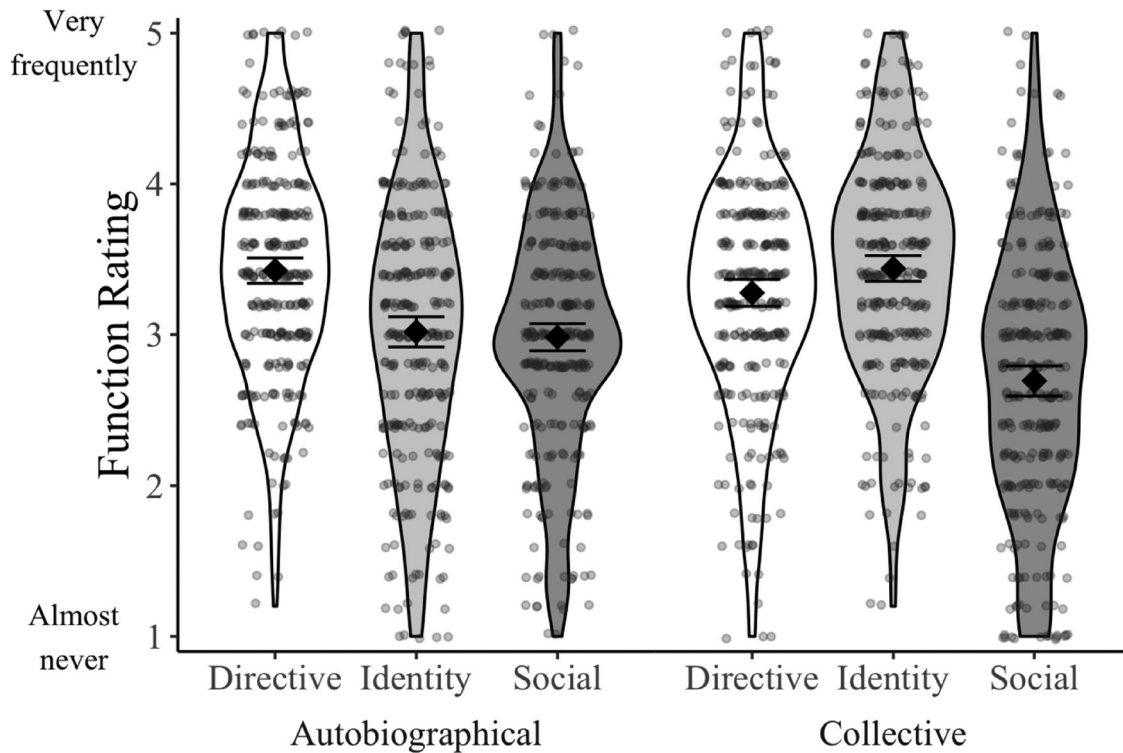


Figure 1. Violin plot of function ratings for autobiographical and collective memories from Experiment 1. Dots represent individual data points, diamonds represent the cell means, and error bars represent the 95% CIs around those cell means.

the Collective TALE. Subjects participated in exchange for Amazon credit. We aimed to collect data until 500 subjects had completed the survey. Because of the way Mechanical Turk interacts with TurkPrime, 510 subjects completed the survey. According to our pre-registered criteria, we then excluded 27 subjects who failed the attention check, and 5 subjects who did not provide a genuine autobiographical memory. We also excluded a further 12 who reported living outside the US, leaving us with our final sample of 466 subjects. The mean age of these subjects was 41.88 ($SD = 13.26$, range 18-78), 164 of whom identified as men, 300 as women, and 2 as gender diverse. All but 3 subjects reported their primary language is English, and all but 16 subjects grew up in the USA. In addition, all but 21 subjects reported the country they most identify with is the USA—the patterns do not change if these subjects are excluded.

Materials and procedure

The procedure for Experiment 2 was similar to that of Experiment 1. Subjects completed two rating scales, in counterbalanced order: the original TALE and the Collective TALE. We adapted the instructions for both versions of the scale to refer to one specific memory.

Half the subjects completed this “specific collective memory” version of the Collective TALE first. They read a brief description of one of five events from American history: World War II, The American Civil War, The American Revolutionary War, The September 11 attacks, or the

signing of the Declaration of Independence (see Supplemental Materials for the full descriptions). These were the five most commonly-nominated events from two studies in which Americans reported “the 10 most important events that have occurred at any point in history that, in your opinion, have shaped America’s identity” (Choi et al., 2021; Taylor et al., 2017). These events vary on a number of dimensions (how long ago they occurred, how positive or negative they were, and how long they lasted), allowing us to search for heterogeneity in the functions of collective memories. The descriptions were between 44 and 61 words ($M = 51.20$), and were adapted from Wikipedia and other encyclopaedias. Then, they rated the adapted questions (see the Supplemental Materials for the full scales).

These subjects then completed the modified, “specific autobiographical memory” version of the original TALE. They were asked to describe “an important event from any point in your life that has helped shape your identity.” We designed this prompt to mirror the prompt used in prior work to elicit the collective events (Taylor et al., 2017). Subjects then rated this memory on the adapted function questions (see the Supplemental Materials).

The other half of subjects completed the same two scales, but in the opposite order. Once subjects had completed both scales, we asked them to report their age and gender. Finally, we asked subjects to report a range of demographics, including the country they live in now and the country with which they most strongly identify.

Results

Before addressing the primary question in Experiment 2, we again determined how often people think and talk about their autobiographical and collective memories in a broad sense. As the bottom half of Table 2 shows, these results were similar to those of Experiment 1. That is, subjects reported they think about their nominated autobiographical memory moderately often, and that people of their country think about the historical event slightly more, $M_{diff} = 0.55$, 95% CI [0.43, 0.67]. Subjects reported they talk about their nominated autobiographical memory moderately often. But in contrast to Experiment 1, they reported that people of their country talk about the respective historical events slightly less often $M_{diff} = 0.21$, 95% CI [0.08, 0.34]. Next, we once again checked the measurement properties of the Collective TALE. As we found in Experiment 1, the three subscales had good reliability ($a_{directive} = 0.88$, $a_{identity} = 0.89$, $a_{social} = 0.84$). Moreover, the results from the exploratory factor analysis were similar to Experiment 1 (see the Supplemental Materials).

We next returned to our primary question: How frequently do collective memories serve directive, identity, and social functions? As the distributions on the right-hand side of Figure 1 show, we replicated the findings from Experiment 1. More specifically, subjects rated their country's specific collective memories as serving all three functions to a substantial degree. This pattern provides converging evidence that collective memories serve identity, directive, and social functions for the collectives who hold them.

When we compared subjects' ratings on the specific collective TALE to their ratings on the specific autobiographical TALE, we again found that subjects rated their autobiographical memories as serving social functions for them to a greater degree than their country's memories do for the country, $M_{diff} = 0.17$, 95% CI [0.07, 0.26]. Unlike Experiment 1, subjects reported that their country's collective memories serve directive functions to a slightly greater degree than their nominated autobiographical memories, $M_{diff} = 0.13$, 95% CI [0.03, 0.24]. But once again, subjects reported that their collective memories serve identity functions for their country more than their autobiographical memories do for themselves, $M_{diff} = 0.38$, 95% CI [0.27, 0.48]. These differences again raise the possibility that collective and autobiographical memories might differ in the degree to which they serve functions.

Thus far we have examined the functions of collective memories by collapsing across the set of five specific memories. But there are also reasons to expect the functions of these specific memories might differ. For example, the events differ markedly in when they occurred—the Revolutionary War occurred more two centuries ago, whereas the September 11 attacks occurred only two decades ago. We might therefore expect the more recent events

to be more relevant to the group's current thinking and behaviour. Another dimension on which the events differ is in the emotions they evoke—for instance, Americans are proud of the Declaration of Independence, and celebrate it each year, whereas the Civil War is an event many Americans are ashamed of (Choi et al., 2021). We know from the literature on autobiographical memories that both the age of a memory and the emotions it evokes are related to the functions that memory serves (Burnell et al., 2020; Rasmussen & Berntsen, 2009). To what extent, then, do the collective memories of different events serve different functions?

To answer this question, we examined the functions of the 5 collective events separately, and display those data in Figure 2. On the whole, the patterns were quite similar across the different events, though there were notable differences (see the Supplemental Materials for a full breakdown). For instance, subjects rated the memories of the two most recent events—World War II and the September 11 attacks—as serving directive functions more than the other three memories. Subjects also rated World War II as serving social functions more than the other four memories. In addition, the Civil War tended to serve social functions less than the other four memories—perhaps because it is a controversial topic even today (Cook, 2017). Finally, World War II was unique in that it served directive functions more than identity, $M_{diff} = 0.16$ [0.10, 0.22]. The myriad dimensions on which these events differ make it difficult to determine exactly what is driving these differences among memories. But the overall patterns suggest that directive, identity, and social functions tend to be common across different collective memories.

General discussion

Across two experiments and 757 subjects, we addressed the possibility that collective memories serve functions akin to the directive, identity, and social functions served by autobiographical memories. In Experiment 1, we asked subjects to rate the functions of their collective memories, in general. In Experiment 2, we asked subjects to rate the functions of a specific collective memory. Across both experiments, subjects reported their collective memories serve directive, identity, and social functions moderately often. In comparing collective memories with autobiographical memories, we found only small differences in how often the two types of memory serve these functions. Taken together, these results support the hypothesis that collective memories serve directive, identity, and social functions for the collectives that hold them.

It is reasonable to wonder, however, whether the task was difficult for subjects to complete—to do so, they would have needed to take the perspective of the people from their country as a whole and then think through how the memory (or memories) served the group. If laypeople are not aware of how their collective

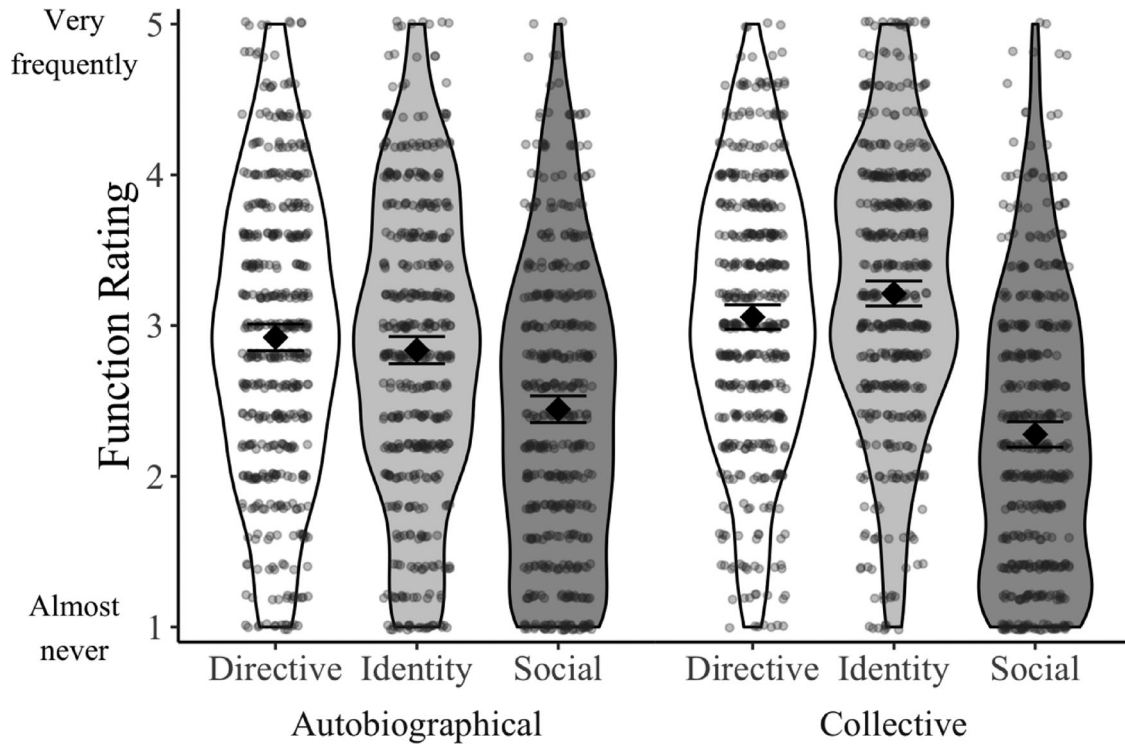


Figure 2. Violin plot of directive (Dir), identity (Idn), and social (Soc) function ratings for each collective event from Experiment 2. The events are displayed in order from oldest to most recent. Dots represent individual data points, diamonds represent the cell means, and error bars represent the 95% CIs around those cell means.

memories serve functions for the group, they may not be able to meaningfully answer the questions we posed to them. Indeed, the fact that subjects rated their collective memories as serving functions to a moderate degree in both studies raises a counter-explanation for our results: that subjects were not sure how to evaluate how often

their country’s collective memories serve functions, so they simply chose the middle of the scale, treating it as a “best fit” option for communicating “I don’t know.” But a look at the distributions displayed in Figure 1 and Figure 3 shows that subjects were not simply selecting the middle of the scale. Instead, their responses were spread

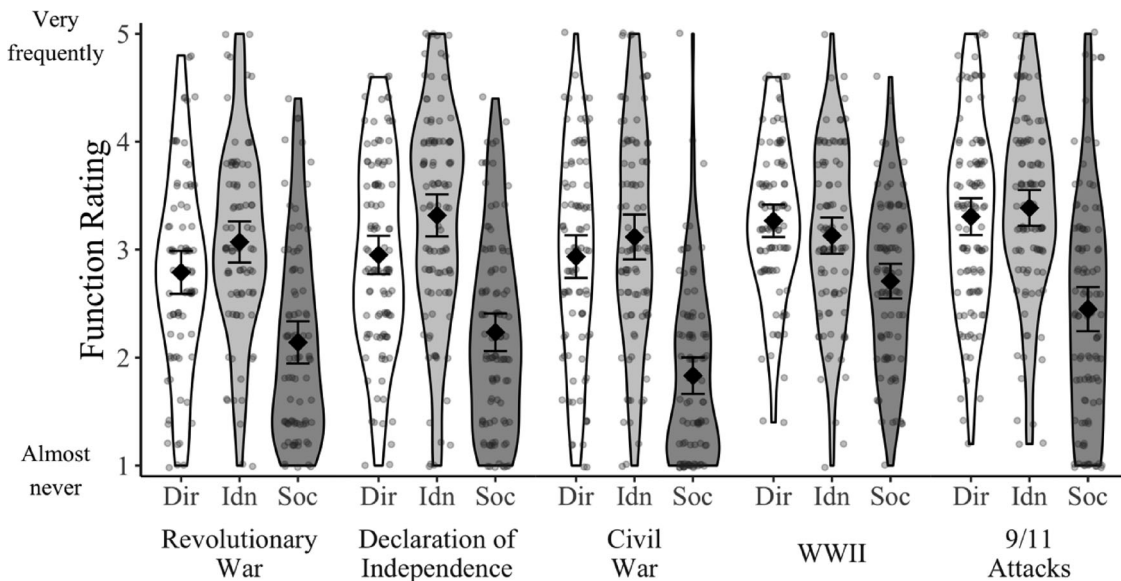


Figure 3. Violin plot of function ratings for autobiographical and collective memories from Experiment 2. Dots represent individual data points, diamonds represent the cell means, and error bars represent the 95% CIs around those cell means.

across the whole scale, with many subjects reporting collective memories serve functions to a high degree. Furthermore, if subjects were simply unsure how to respond, we should expect to see similar ratings across all functions and across all events (Experiment 2). But that is not what we saw; instead, subjects consistently tended to rate directive and identity functions higher than social functions. Moreover, in Experiment 2 we saw variation across the different events. This counter-explanation, therefore, does not adequately explain our results. Nonetheless, people's beliefs about the functions of their country's collective memories do not necessarily align with the functions those memories actually serve (see Burnell et al., 2020). It is therefore important to find more direct ways to systematically evaluate the effects of collective memories on a country's decisions, identity, and social relationships.

Our findings provide empirical support for existing theoretical perspectives on the functions of collective memories. More specifically, the findings fit with suggestions that historical events play an important role in shaping the identity of groups and convey useful lessons that guide the decision making of collectives (Assmann & Czaplicka, 1995; Hirst et al., 2018; Wertsch & Roediger, 2008). Furthermore, we found evidence that people believe groups they belong to sometimes use collective memories to help them forge and maintain relationships with other groups. These three functions were common across important historical events, regardless of whether those events were old (e.g., The Revolutionary War), or more recent (e.g., the September 11 attacks).

However, it is likely that the functions of collective memories are much more complex than our data suggest. For example, the sum scores in the Collective TALE do not distinguish between memories that give the group a sense of continuity over time and those that contribute to a change in values. Yet we might expect the memory of a widely celebrated event such as the Declaration of Independence to have markedly different effects on Americans' sense of identity than a memory of a more divisive event such as the Civil War. Furthermore, collective memories might serve identity functions in ways the TALE does not capture, such as by fostering a sense of unity or togetherness among the group. The functions of a given collective memory might also depend on the context in which that memory is recalled, and are likely to change over time (see Alea & Bluck, 2003).

Here, we used the three-function model from the autobiographical memory literature because this model that fits with theoretical accounts of collective memory functions (Bluck et al., 2005; Pillemer, 1992). But collective memories are shaped by and contribute to cultural and social processes in ways that autobiographical memories do not, so it seems reasonable to speculate that collective memories might serve functions that are not captured by the three-function model (Wertsch, 2002). For instance,

there is evidence collective memories can play an important role in passing knowledge from one generation to the next (Cordonnier et al., 2021; Mergler & Goldstein, 1983; Stone et al., 2014; Svob et al., 2016). Although autobiographical memories can also be passed down, the distributed storage of collective memories and their inclusion in formal education might make this function more prevalent in collective memories (Fivush et al., 2008; Nelson & Fivush, 2004). It is therefore important for future research to investigate other possible functions of collective memories.

We also do not know the extent to which other kinds of collective memories, such as those held by family or cultural groups, serve the same functions as national collective memories (Manier & Hirst, 2007). The complex dynamics that affect the behaviour, identity, and relationships of these various groups differ substantially, as do the properties of the collective memories held by these groups (Manier & Hirst, 2007; Wang, 2008). As a result, we might expect differences in the functions served by the collective memories held by these different groups. To address this possibility, the collective memory TALE we present here could easily be modified to tap into the memories of a different kind of collective (for instance, by replacing "my country's history" with "my family's past").

Finally, although collective memories might serve functions for the group as a whole, these memories might also serve distinct functions for the individual people who make up that group. For instance, the memory of the September 11 attacks might lead some Americans to fear plane travel. For all these reasons, the Collective TALE we present here should not be thought of as a complete accounting of collective memory functions, but rather as a starting point from which to build our understanding of the benefits collective memories provide for the groups who hold them.

Of course, collective memories might not always be entirely beneficial. Many collective memories, including some of the memories we examined in Experiment 2, are of negative events. Although our findings suggest even these negative collective memories can serve functions, they might also carry with them maladaptive effects—much like autobiographical memories (Burnell et al., 2020). For example, the memory of the September 11 attacks led many Americans to be fearful of travel and contributed to America's decision to go to war in Iraq (Goodrich, 2002; McCartney, 2004; Pillemer, 2003). The extent to which collective memories might be harmful for the collectives who hold them is an empirical question that we hope future work can address.

Our findings also add to a growing body of evidence that autobiographical and collective memories share many characteristics, by showing these memories can serve similar functions (Manier & Hirst, 2007; Roediger & DeSoto, 2014). Given that some of the collective events we studied occurred long before subjects were

even born, these similarities have implications for how we understand the functions of memory. In particular, these data raise the possibility that memories serve directive, identity, and social functions even in the absence of episodic recollection. Still, memories of events people did not themselves experience can be highly detailed and sometimes have episodic-like qualities, so collective memories are not necessarily devoid of these qualities (Pillemer et al., 2015; Rubin & Umanath, 2015). These data, therefore, do not preclude a contribution of episodic recollection to memory functions. Indeed, there is evidence that episodic information in autobiographical memories can help people solve problems (Sheldon et al., 2011). To the extent that episodic information plays some part in memory functions, we might expect collective memories for events people lived through to serve functions more than ones people did not live through. Our data provide some tentative support for this possibility: of the five events, subjects rated the September 11 attacks—the only event that occurred in subjects' lifetimes—as higher on directive and identity functions than any other memory and social functions more than three of the four other memories (see the Supplemental Materials). But such a possibility is purely preliminary, tempered by the fact that we had limited experimental control.

There are, naturally, several limitations to our conclusions. First, the factor structure of the collective version of the TALE did not perfectly align with that of the original version. Although the structure was very similar, we found that one directive item loaded only weakly on the expected factor in both experiments. For this reason, it is worth investigating the possibility that the precise ways in which collective memories serve directive, identity, and social functions might be different from the ways in which autobiographical memories serve these functions. Second, our samples consisted entirely of American and Canadian subjects. The extent to which these findings might generalise to other cultures remains unclear. For example, in China, the past is viewed as a particularly important source of knowledge and guidance (Wang, 2008). Therefore, we might expect collective memories to serve directive functions more in China than in the United States.

Finally, the idea of a collective memory relies on the assumption that there is some consensus among the collective about that event. But in a group as large as a nation, there is likely to be substantial heterogeneity in how people view and draw on collective memories. For example, younger and older Americans have very different attitudes towards the events of World War II, and there is a political divide in attitudes towards the US Civil War (Reingold & Wike, 1998; Zaromb et al., 2014). In addition, people vary substantially in their knowledge of their country's history, and how strongly they identify with their country, both of which can

affect people's perspectives on collective memories (Sibley et al., 2008; Stone et al., 2014). Here, we do not have the demographic data to identify heterogeneity in people's beliefs about the functions of collective memories. But investigating how consensus about an event (or a lack thereof) might affect collective memory functions is an important avenue for future research.

Taken together, the experiments we report here provide evidence that collective memories serve directive, identity, and social functions. They also add to a growing body of literature showing that collective memories and autobiographical memories are similar in a variety of ways. Although this study is only the first step towards understanding the functions of collective memories, our findings provide a foothold from which to investigate further the effects of these memories on the collectives who hold them.

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Author contributions

R. Burnell, S. Umanath, and M. Garry developed the study concept and design together. R. Burnell & S. Umanath created the experimental materials. R. Burnell organised data collection, and performed all data analyses. R. Burnell drafted the manuscript with S. Umanath. M. Garry provided critical revisions.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Data availability

All numerical data have been made available via the Open Science Framework, along with the analysis script (<https://osf.io/rfjq3/>). Our ethical approval precludes us from making subjects' written responses publicly available, but these responses are available on request.

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