

# COHORTS, CHRONOLOGY, AND COLLECTIVE MEMORIES

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**Abstract** We asked Americans to tell us the national and world events that they believe to have been especially important since the 1930s, using replicated cross-section surveys carried out in 1985, in 2000, and after September 11, 2001. Our primary interests are, first, in how collective memories change as new events occur, such as the end of the Cold War or the 9/11 terrorist attack; and second, in whether the origin of such memories during the critical period of adolescence and early adulthood, as well as their connection with education, remain stable over time and consistent with theory. As part of our investigation we consider four related issues: collective forgetting as well as collective remembering; the distinction between ease of recalling events and judgments of their importance; compound events, which are composed of sub-events that can be remembered separately by respondents; and larger social and technological changes difficult or impossible to date with any precision. Panel data from the second and third surveys, obtained shortly before and after 9/11, aid in determining which earlier collective memories were superseded by memories of the terrorist attack itself.

For I myself can now remember my first day . . . more exactly, when I think of it, than all the ones that followed.

Imre Kertész, *Fateless*, on his first day in Auschwitz at age 14

Bracketing the seventy years between the early 1930s and the end of 2001 were two major events: the Great Depression and the terrorist attack on September 11, 2001. The Depression was within the personal memories of the oldest Americans alive in 2001, while the September 11 attack was almost the

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only major national event to have been a matter of personal experience for those just entering adulthood. In between these two events were many others that might be remembered as important by the public, including major wars, assassinations of leaders, and significant social and technological changes.

We draw on three national surveys of Americans in 1985, 2000, and early 2002 to address two sets of issues about such potential sources of collective memories. First, what events do Americans recall as especially important at each of the three time points? Furthermore, what happens to shared memories of earlier events as new ones occur that compete with them? Thus we deal not only with collective remembering, but also with collective forgetting, at least in the sense that memories previously appearing as primary can be overshadowed by more recent memories—or conceivably by still older ones resurrected because of new happenings.

Second, to what extent can changes in collective memories be connected to two basic social background variables: cohort experience and education? Education provides indirect knowledge about the past and produces the main type of memory available to those too young to have lived through an event, as when 18 year olds today learn about World War II and come to “remember” it as important. Cohort experience, however, reflects autobiographical memories of important events—for example, hearing about the assassination of John F. Kennedy on the day it happened in 1963 and then remembering it at later points in time.

We are interested, however, not only in the memories of all those who experienced a particular event, but more specifically in the hypothesis that an event experienced during adolescence or early adulthood—which we will refer to as the “critical period” or “critical ages”—has an especially strong impact on memory. The theoretical basis of this hypothesis is relatively straightforward. On the one hand, national and world events that happened before a person’s birth or in the earliest years of life must be learned about secondhand and therefore should lack the impact of events personally experienced. On the other hand, and less obviously, other large events that are experienced beyond early adulthood can seldom appear to have the uniqueness of those that took place in the dawn of youth, and so they also are less likely to have as great an impact. Thus we expect a primacy effect that gives added personal significance to the first big event that young people experience.<sup>1</sup>

1. This second point was the focus of Karl Mannheim’s ([1928] 1952) classic essay on generations. Similar ideas have been developed and applied by later writers in various contexts (e.g., Alwin and Krosnick 1991; Davis 1979; Inglehart 1977; Jennings 1996; Rintala 1968; Rubin, Wetzler, and Nebes 1986; Schuman and Scott 1989; Sears and Valentino 1997). In other realms also, “primacy” increases the impact of experience, whether the primacy is created psychologically (Bower 2000) or politically (Appleby 2000). Collective memory as such was first clearly conceptualized by Maurice Halbwachs ([1950] 1980, 1992).

We recognize that media reports are the main way that most Americans learn about *both* ongoing and earlier national and world events, but there is a fundamental difference between contemporaneous and later media experience: the outcome is uncertain in the former case but not in the latter. When President Kennedy was shot in 1963, there were immediate anxious questions about both the cause of his assassination and its ramifications. Learning about the same event some years later, even from watching the same images of the shooting, does not raise the same urgent questions, and therefore the event is not likely to have the same deep and lasting emotional impact. Moreover, an ongoing event stimulates conversations with others (“rehearsals”) that also enhance memory (Brown and Kulik 1977; Pennebaker and Banasik 1997), much more so than does learning about the event at a later point. Thus for events that capture immediate public attention, those alive at the time should have acquired and should retain stronger memories than those who came afterward, no matter how much the latter are exposed to the same events in school or in other ways.<sup>2</sup>

## Data

We have three main sources of evidence. First, we reanalyze data from 1985 originally reported by Schuman and Scott (1989). Second, we report new data gathered in 2000 and early 2001 to assess changes in collective memories after 15 years, a time period during which there were a number of important events such as the end of Soviet communism and the Cold War. Third, we report both cross-section and panel data gathered after a much shorter interval but a much more catastrophic event: the September 11, 2001, terrorist attack on American soil. We will refer to the three time points for which data are available as 1985, 2000, and post-9/11. In all three surveys, respondents were asked the following open-ended question:

There have been a lot of national and world events and changes over the past (50/70) or so years—*say, from about 1930 right up until today*. Would you mention one or two such events or changes that seem to you to have been *especially* important?

In 1985 the time period was defined as “the past 50 years,” whereas in the 2000 and post-9/11 surveys it was defined as “the past 70 years” in order to

2. Cohort experience and education cannot be separated completely. High school seniors learning today about World War II are having a form of cohort experience that creates memories, even though it is not a direct experience of the war itself. Wertsch (2002) refers to such later learning as “textually mediated,” a useful term, but even the experience of a national or world event at the time it occurs is communicated to most people by television and other media. Here we will use the term “cohort experience” to refer to experiencing an event when it happens, whether directly or through media. “Collective memories” include both events personally experienced and those learned about long after they occurred.

keep the same approximate starting date. In all three surveys, if a respondent mentioned only one event in answer to the question, the interviewer requested a second event: “Is there any other national or world event or change over the past (50/70) years that you feel was especially important?”

All the data were gathered by the University of Michigan’s Survey Research Center (SRC) as part of its monthly national random digit dial (RDD) telephone surveys, which sample the contiguous United States household population age 18 and older at the time of the interview. In 1985 the interviews were carried out over four months (April, May, August, and September). The 2000 survey refers to interviews administered continuously over thirteen months from July 2000 through July 2001; we call it the 2000 survey to indicate that it preceded September 11, 2001. The post-9/11 interviews were carried out from November 2001 through January 2002. The number of cases for analysis from the three time points are, respectively, 1,410; 3,884; and 894. SRC’s samples include approximately three hundred completed RDD cases each month, and it is these that have been cumulated to give our total samples for the three surveys. (SRC also reinterviews approximately two hundred respondents each month from its survey carried out six months earlier, and we drew on these to construct panel data discussed at a later point.) Response rates averaged 74 percent in 1985 and dropped to an average of 55 percent in the 2000 and post-9/11 surveys.<sup>3</sup> It is unlikely that this decline has influenced our results importantly (see Curtin, Presser, and Singer 2000; also Keeter et al. 2000), and in addition we control throughout for gender and race, as well as employing age and education in our analysis—variables that might be affected by response rate and are certainly affected by change over time.

We typically use “mention” as the operational term for survey responses regarded as expressing collective memories. “First mentions” are mutually exclusive, adding to 100 percent. “Any mentions” (i.e., mentioned either first or second) are dichotomies, with respondents who mention a particular event either first or second coded 1 and all others (including those who could not think of any events) coded as 0, and it is these dichotomies that are analyzed using logistic regression and graphed in our later figures. In 1985 60 percent of the respondents were able to mention two events, and in 2000 the figure was almost the same, 61 percent. The coding of events was straightforward and reliable, with agreement between independent coders reaching at least 90 percent for major events in all surveys.

Events in tables 1 and 2 are listed in order of their frequency in 1985, with their rank order in later surveys indicated by the numbers in parentheses. We show as separate categories in the tables only those events mentioned by at least 5 percent of respondents in at least one survey.

3. We used the Response Rate 4 (RR4) calculation method published by the American Association for Public Opinion Research (2000). For further information on the SRC monthly survey, see the Web site: [www.sca.isr.umich.edu](http://www.sca.isr.umich.edu).

**Table 1.** National and World Events Most Often Mentioned: 1985 and 2000

Event	Responses in 1985			Responses in 2000			% Change: 1985 to 2000 in Any Mentions
	Percent First Mention	Percent Any Mention (Ranks)	Percent	Percent Any Mention (Ranks)	Percent First Mention	Percent Any Mention (Ranks)	
Pre-1985 events							
World War II	18.9	26.0 (1)	14.2	19.7 (1)			-6.3 <sup>***</sup>
Vietnam War	10.3	19.6 (2)	3.1	7.6 (3)			-12.0 <sup>***</sup>
Space exploration	6.6	11.3 (3)	3.2	6.5 (5)			-4.8 <sup>***</sup>
JFK assassination	4.5	7.9 (4)	2.4	4.0 (7)			-3.9 <sup>***</sup>
Civil rights	5.5	7.6 (5)	4.6	6.4 (6)			-1.2
Concern over nuclear war	4.0	7.0 (6)	0.4	1.1 (9)			-5.9 <sup>***</sup>
Advances in communication and transportation	3.3	5.5 (7)	2.2	3.9 (8)			-1.6 <sup>*</sup>
Great Depression	4.1	5.0 (8)	5.0	6.7 (4)			+1.7 <sup>*</sup>
Computers and Internet	1.6	3.5 (9)	5.5	9.9 (2)			+6.4 <sup>***</sup>
Post-1985 events							
End of communism <sup>a</sup>	—	—	6.2	10.6			—
1991 Gulf War	—	—	2.7	4.7			—
Other responses	30.1		30.5				
DK	11.1		20.0				
Total	100%		100%				
N	1,410		3,884				

NOTE.—See text for question wording, and text footnotes for definitions of “first mention” and “any mention” and for exact dates and other technical details about the surveys. The events that occurred before 1985 are listed in order of the frequency with which they were mentioned (any mention) in the 1985 survey, and their rank order in later surveys is shown by the numbers in parentheses.

<sup>a</sup> We coded this overall category in terms of three types of (mutually exclusive) mentions in 2000 which are collapsed in the table but are discussed separately at the later point: (1) fall of the Berlin Wall (first: 2.9 percent; any: 4.6 percent); (2) end of Soviet Union/communism (first: 2.5 percent; any: 4.3 percent); and (3) end of the Cold War (first: 0.8 percent; any: 1.7 percent).

<sup>\*\*\*</sup>  $p < .05$  (Fisher’s Exact test, two-sided).

<sup>\*</sup>  $p < .001$ .

**Table 2.** National and World Events Most Often Mentioned: 2000 and Post-9/11

Event	Responses in 2000		Post-9/11 Responses		% Change: 2000 to Post-9/11 in Any Mentions
	Percent First Mention	Percent Any Mention (Ranks)	Percent First Mention	Percent Any Mention (Ranks)	
Pre-1985 events					
World War II	14.2	19.7 (1)	19.5	28.2 (1)	+8.5 <sup>***</sup>
Vietnam War	3.1	7.6 (4)	3.6	10.2 (2)	+2.6 <sup>a</sup>
Space exploration	3.2	6.5 (6)	1.6	2.8 (8)	-3.7 <sup>***</sup>
JFK assassination	2.4	4.0 (9)	2.7	5.8 (4)	+1.8 <sup>a</sup>
Civil rights	4.6	6.4 (7)	1.8	2.5 (9)	-4.0 <sup>***</sup>
Concern over nuclear war	0.4	1.1 (11)	0.2	0.4 (11)	-0.7
Advances in Communication and Transportation	2.2	3.9 (10)	0.8	1.8 (10)	-2.1 <sup>***</sup>
Great Depression	5.0	6.7 (5)	6.2	9.4 (3)	+2.7 <sup>***</sup>
Computers and Internet	5.5	9.9 (3)	2.5	4.8 (6)	-5.1 <sup>***</sup>
Post-1985 events					
End of Communism <sup>a</sup>	6.2	10.6 (2)	1.0	3.2 (7)	-7.4 <sup>***</sup>
1991 Gulf War	2.7	4.7 (8)	1.3	5.7 (5)	+1.0
9/11/01			31.2	47.4	
Other responses	30.5		14.3		
DK	20.0		13.4		
Total	100%		100%		
N	3,884		894		

NOTE.—Events that occurred prior to 1985 are listed in order of the frequency with which they were mentioned (any mention) in the 1985 survey. The rank order in each survey is shown by the numbers in parentheses.

<sup>a</sup> We coded this overall category in terms of three types of (mutually exclusive) mentions in each survey, which are collapsed in the table but discussed separately at a later point. The proportions mentioning these specific events in the post-9/11 survey are as follows: (1) fall of the Berlin Wall (first: 0.3 percent; any: 0.9 percent); (2) end of Soviet Union/communism (first: 0.3 percent; any: 1.3 percent); and (3) end of the Cold War (first: 0.3 percent; any: 1.0 percent).

<sup>\*</sup>  $p < .05$  (Fisher's Exact test, two-sided).

<sup>\*\*</sup>  $p < .01$ .

<sup>\*\*\*</sup>  $p < .001$ .

## Changes in the Events Americans Remember as Important

FROM 1985 TO 2000

The national and world events mentioned most often as especially important in 1985 and in 2000 are presented in table 1, with “first mentions” and “any mentions” shown separately for each year.<sup>4</sup> The Vietnam War suffered the greatest drop in percentage of mentions between 1985 and 2000, but equally notable is the virtual disappearance of concern over a possible nuclear war.<sup>5</sup> Both of these declines can be seen as mainly a result of the major new event that entered collective memory between 1985 and 2000. The end of communism and the Cold War directly reduced fears of a nuclear conflict, and at the same time it replaced the Vietnam War as the event mentioned by the second highest proportion of respondents. World War II was the most frequently recalled collective memory in 2000, just as it had been in 1985, though it showed a small but significant decline in mentions between the two surveys. Whatever the reason for the drop, temporal distance is not a sufficient explanation, for we will see mentions of World War II grow appreciably a few months later in the post-9/11 survey.

In contrast to the decreased percentage of mentions for several prior events, two other “old” events in table 1 showed an increase in mentions between 1985 and 2000, though the reasons must be very different in the two cases. There was a small but significant rise in memories of the Depression some 60 years after it had ended. We speculate that this resurgence was stimulated by the sudden drop in the stock market starting in April 2000, three months before our 2000 survey began. For example, the front cover of the April 17, 2000, issue of *Business Week* announced in large letters, “WALL STREET: IS THE PARTY OVER?” and a graph inside the magazine showed a dramatic drop in the Nasdaq Composite Index between its March 10 high and an early April low. Likewise, a *New York Times* article on April 16, 2000, began, “Where there

4. “First mentions” and “any mentions” are highly correlated ( $r$  above .97 across the named categories in each of the three surveys), since a large proportion of “any mentions” are indeed “first mentions.” However, the “any mention” dichotomies use more data and are simpler to analyze and because they are not mutually exclusive they allow intercorrelations among events mentioned. Weights provided by the monthly survey to adjust for household composition and departures from census demographic data produce differences from the unweighted data that are all small and inconsequential for tables 1 and 2, and hence are not used here, nor in later regressions where weighted and unweighted estimated coefficients and probability values are quite similar as well (see also DuMouchel and Duncan 1983 on not using weights in regressions).

5. The number of events requested by interviewers was limited to two, though even with explicit encouragement some 40 percent of our national sample could not mention even two especially important national or world events. A request for a third event from the past would probably have seen a further drop-off. We are speaking here of “free recall”—given only the cues in the question—rather than of identification of events if presented as part of a list, which is no doubt easier for respondents. However, later we provide evidence that the order in which events come to respondents’ minds ordinarily does not differ from respondents’ judgments as to their order of importance on a list.

was unchecked optimism there now creeps fear,” and the writer emphasized how widely the country had been affected. Thus the Depression is an example of a very old event apparently restored to collective memory long after the event itself had ended.<sup>6</sup>

The increase in mentions of the computer represents an entirely different path between 1985 and 2000. Although the computer was frequently referred to in news reports in the early 1980s, this was mostly in terms of the need for people to become “computer-literate” due to the growing significance of large computers for education and employment. Personal computers were still rare in 1985, but by the time of our 2000 survey about half of all American households had a personal computer, more than 40 percent had direct access to the Internet (U.S. Census Bureau 2001), and others had contacts in other ways. Thus, the nearly three-fold increase in mentions of the computer is readily understandable in terms of changes in direct personal experience between the two surveys.

#### FROM 2000 TO POST-9/11

After the 9/11 attack, we obtained additional data over a three-month period starting in November 2001. Many observers speculated that the terrorist attack would change attitudes and beliefs in the United States radically and forever (e.g., Bernstein 2002), and it seemed possible that it would supersede all past events in the collective memories of Americans. Table 2 repeats the percentages for 2000 from table 1, adds the post-9/11 findings, and shows the differences between the two. The proportion of respondents who mentioned as especially important the terrorist attack in the post-9/11 survey is indeed much higher than for any event recorded in the 1985 and 2000 surveys, but it is nevertheless far from unanimous: 31.2 percent gave the attack as their first event, and a total of 47.4 percent mentioned it as one of two important events. Thus, salient as 9/11 was for the memories of Americans in the weeks following the attack, half of the respondents did not mention it at all, and others gave it only as a second response. Collective memories of 9/11 were not as salient for Americans a few months after the event as memories of World War II were for Japanese in Yokohama in 1991 (60 percent first mentions and 63 percent any mentions), even though the Japanese respondents were thinking back nearly half a century rather than a matter of weeks (Schuman, Akiyama, and Knäuper 1998). Moreover, among Japanese who were old enough to have lived through the war, including the intensive bombing of their own city of Yokohama, it was mentioned as important by over 90 percent of the sample. Living in the midst of such an event has a far more lasting effect on collective memory than vicarious experience of even a contemporaneous and cataclysmic

6. There is no indication of a trend across months in our 2000 survey in mentions of the Depression ( $\tau$  beta = .00). However, our later post-9/11 survey does show a further significant increase in Depression mentions, as indicated in table 2.



event; indeed, elderly Japanese in Yokohama rarely mentioned Hiroshima, though doubtless they had heard of it.

It is important to note also in table 2 that memories of America's two major past wars from the seventy-year period actually rose in the post-9/11 survey, with a substantial increase for World War II. The increase might be attributed to the number of commentators who cited Pearl Harbor as an analogue to 9/11, and perhaps also because "the nation's latest war brings closer its every previous war" (Leithauser 2003, p. 41). (There had also been recent films dealing with each war, but they are unlikely to account for the rise over the few months between the 2000 and post-9/11 surveys.) At the other extreme, the greatest loss in percentage terms was for the end of communism and the Cold War, which had occurred only a decade earlier. The entire Cold War and threat of Soviet communism faded from the forefront of American memory of important events, replaced by a new threat from an entirely different direction. In that sense, 2001 ushered in not only an important new collective memory but also an important trend toward collective forgetting. One should bear in mind that since respondents were encouraged to give two events, the mention of 9/11 did not preclude mention of the end of communism as next in importance, as occurred for World War II.<sup>7</sup>

In sum, the major collective memories held by Americans in the years we studied involved wars of one kind or another, though economic difficulties and technological changes also had an impact. Some collective memories may show loss as a result of a process similar to what psychologists term "interference" (Bower 2000)—sometimes only in a relative way as when there was a small trend for the 1991 Gulf War to lose first mentions and yet retain or increase second mentions; but more directly when memories of the end of communism dropped out of the picture almost entirely as the result of a new threat. But what Schacter (2001) calls the "transience" of individual memories does not appear important within our time frame. The strongest and most resurgent memory is for one of the oldest events, World War II, and the oldest event of all, the Great Depression, has recently been restored to public memory for part of the population not even alive in the 1930s.

#### PANEL DATA

In addition to the new post-9/11 sample, we obtained reinterviews during those same months with 610 respondents who had been asked exactly the same question six months earlier in the 2000 survey (specifically in the months of May through July of 2001). These panel data allow us to address

7. There is also a highly significant decrease in mention of computers and the Internet in the post-9/11 survey. This may be due to their loss of salience in the wake of the attack, but it may be partly a result of disillusionment after the "dot-com bust," for there is evidence of a decline in computer/Internet mentions over the 13 months of the 2000 survey: the Pearson correlation between mentions and time is small but reliable:  $-.06, p < .002$ .

more directly the issue of where the large numbers of respondents naming the 9/11 terrorist attack “came from”—that is, what they had answered in the previous survey in 2000.<sup>8</sup> Table 3 presents the percentage of those reinterviewed in the post-9/11 survey who mentioned the terrorist attack overall and then separately for nine groups defined by the specific events they had mentioned in the 2000 survey. (Only events mentioned by at least 25 of these respondents in 2000 are included in the table.) Overall, 53 percent of the 610 reinterviewed respondents mentioned 9/11, as shown in the first row of table 3. In the second row, 30 of the reinterview respondents are seen to have mentioned the Gulf War in the 2000 survey, and of these 76.7 percent mentioned the terrorist attack when reinterviewed after 9/11, the largest such change among all the respondents in the table. The third row shows that of the 580 respondents who did not mention the Gulf War in the 2000 survey, 51.9 percent mentioned the terrorist attack in the later survey. The right-hand column provides evidence that the null hypothesis that the proportion of those who mention the terrorist attack is the same for respondents who earlier gave the Gulf War as it is for the other panel respondents can clearly be rejected.

The next pair of rows in table 3 shows that those who had mentioned the end of communism in 2000 were also more likely than others to mention the terrorist attack several months later. This pattern fits the sharp decrease in the proportion of respondents who mentioned the end of communism between the 2000 and the post-9/11 surveys, which we earlier described as an example of “collective forgetting.” In the case of the Gulf War, however, table 2 indicates that a decrease occurred only for first mentions and that Gulf War responses actually increased slightly for any mentions, implying that it was not forgotten but rather relegated to second place in importance. Why should these two events both show substantial change relative to September 11, and yet one (the end of communism) disappear almost completely from our measure of collective memory, while the other retain a strong position as a second mention? The simplest explanation is that the Gulf War and Iraq were connected in the minds of many respondents with September 11, as it was in the views of important members of the Bush administration (Woodward 2002, pp. 48–49). This interpretation is supported by the fact that mentions of the Gulf War are

8. Two methodological problems inherent in this analysis are whether the act of having been previously interviewed may have affected one’s answers the second time, and whether the respondents who could be reinterviewed (68 percent of the total) differ from those who were not reinterviewed. We have no direct evidence on the first problem, but because these were open questions asked about six months apart at the end of a long interview, we doubt there was much effect. Any effect that may have occurred would presumably have led to repeating an earlier response, thus minimizing change. With regard to the second problem, we compared the respondents from the 2000 survey who were successfully reinterviewed six months later with those who were not: there is no indication of a difference in age, but the former are slightly better educated than the latter ( $\tau$  beta = .08,  $p < .01$ ). To the extent that this difference may have affected the panel data, it would lead to underestimating the contribution of less-educated respondents to the post-9/11 mention of September 11, but educational level was not related to mentions of September 11 as such.

**Table 3.** Origin of September 11 Responses

Whether Event was Mentioned in 2000 Survey	Total <i>N</i> in 2000 Survey	Percent Mentioning September 11 in post-9/11 Survey	Chi-square statistic (probability)
Total	610	53.1%	—
Gulf War			
Yes	30	76.7%	7.03 (.008)
No	580	51.9%	
End of communism			
Yes	63	65.1%	4.04 (.044)
No	547	51.7%	
Great Depression			
Yes	48	58.3%	0.57 (.450)
No	562	52.7%	
Space exploration			
Yes	47	57.4%	0.38 (.536)
No	563	52.7%	
Vietnam War			
Yes	55	56.4%	0.26 (.613)
No	555	52.8%	
Don't know			
Yes	89	55.1%	0.16 (.691)
No	521	52.8%	
World War II			
Yes	140	45.7%	4.00 (.046)
No	470	55.3%	
Civil rights			
Yes	32	43.8%	1.19 (.275)
No	578	53.6%	
Computers and Internet			
Yes	73	42.5%	3.78 (.052)
No	537	54.6%	

NOTE.—There were 610 respondents in the panel. Minor events mentioned in 2000 are not included in the table. The Chi-Square Statistic is used to test the null hypothesis that the proportion of respondents that mention the 9/11 event is the same for those who did and those who did not mention the specified event in the 2000 survey. This statistic has one degree of freedom, and the corresponding *p*-value is given in parentheses.

the only mentions of events in table 2 to be positively correlated with mentions of September 11 ( $r = .14$ ,  $p < .001$ ). The correlations of September 11 with end of communism and with most other events are negative, as expected when events compete to be mentioned at all.

Most of the other comparisons in table 3 do not approach significance, but those who in 2000 gave World War II and those who gave the development of

computers and the Internet were significantly *less* likely to have mentioned September 11 in their reinterview a few months later. In the case of World War II, this appears to be due at least partly to the substantial proportion of those who named that event in the initial interview and then repeated it in the reinterview six months later: 61 percent, which is much greater than the proportion repeating any other event (data not shown). If anything, the 9/11 attack may well have strengthened memories of World War II, as was also evident in table 2. On the other hand, among those who mentioned the computer at the initial interview, only 18 percent gave similar mentions in their reinterviews; most moved to various other categories rather than to any single one such as September 11.

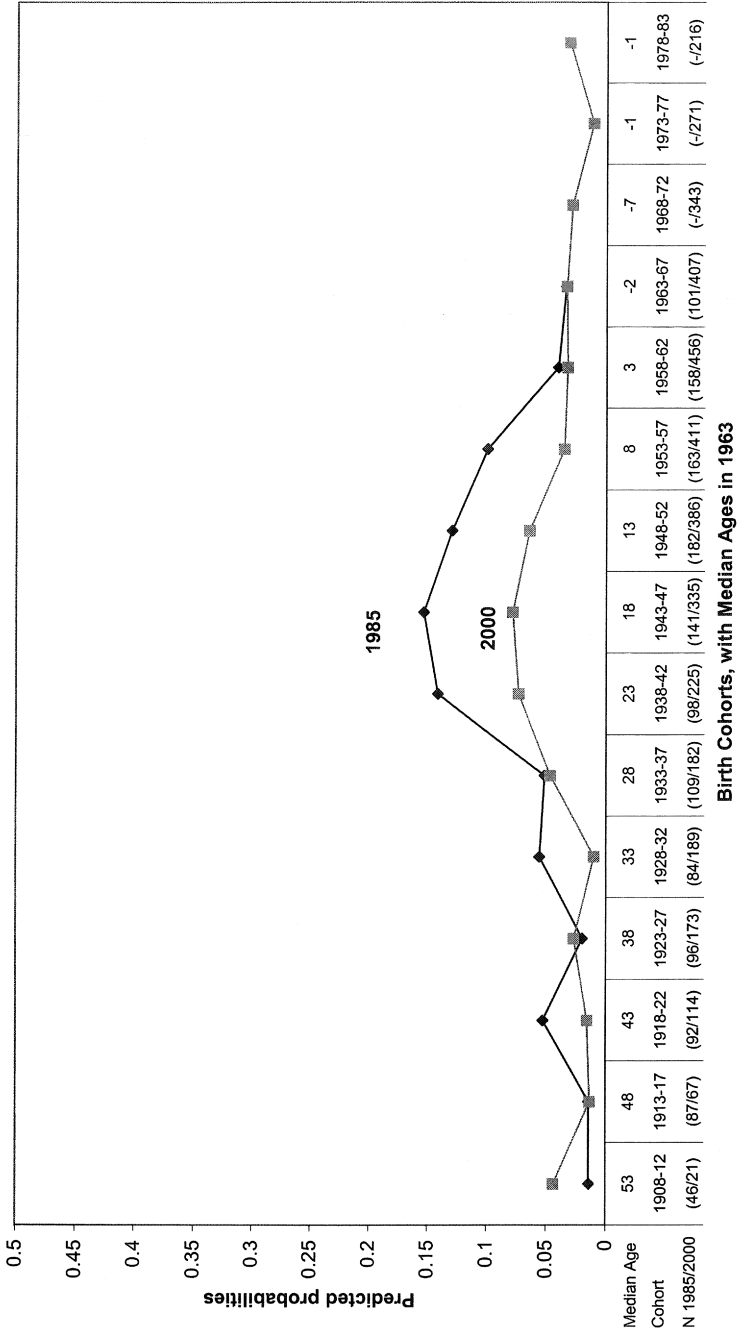
### The Social Sources of Collective Memories: Cohort Experience and Education

We ask now whether the 1985 and 2000 data are consistent with the hypothesis that adolescence and early adulthood provide a critical period for the formation of collective memories—and further, whether the hypothesis requires modification when measurement over time is brought into the picture. We also examine the importance of education with respect to mentions of past events. Our main focus will be on events that have relatively clear beginning and ending dates; events that cannot be readily dated will be discussed briefly at a later point.

The 1963 assassination of President Kennedy is particularly appropriate for this analysis because it occurred at a precise point in time, caught the attention of virtually the entire American population alive at that instant, and is located along the birth cohort continuum such that we can readily examine cohorts that entered the critical period of adolescence and early adulthood before, during, and after the date of the event. Moreover, to the extent that we find the relationship between collective memories of the assassination and birth cohort to be nonlinear, as predicted by theory, and to occur at different points in time, there will be good reason to interpret it as a cohort effect, rather than an effect due to aging or period (Glenn 2003; Rodgers 1982).

Mentions of the assassination in response to our open question reveal a clear curvilinear relation to birth year in figure 1: the event was recalled as especially important in both 1985 and 2000 by those who were in their teens or early twenties in 1963 when it occurred.<sup>9</sup> If we focus on the midpoints of

9. Calculations for this and later figures testing cohort hypotheses were carried out treating grouped cohort categories as dummy variables in logistic regression, with predicted probabilities plotted. Education (0–11, 12, 13–15, 16, 17+), gender, and race (white versus nonwhite) are regularly included as covariates, with all categories treated as dummy variables. The bottom line below each figure shows the base *Ns* for each point in 1985 and 2000. The next line shows the cohort ranges,



**Figure 1.** Kennedy assassination memories by year and cohort, with education, gender, and race controlled.

the cohort categories, the assassination was recalled in 1985 as especially important most often by Americans who had been age 18 in 1963; next most often by those who had been age 23; then by those age 13; and finally by those age 8. It came to mind as important least often by those not yet born in 1963 or too young to have been much aware of the event, and also by those who did in fact experience it but were beyond their twenties at the time. The latter finding is particularly important because it indicates that it was not just being alive to experience the event, but experiencing it during the critical ages of adolescence and early adulthood, that counts. The pattern for 2000 is quite similar, though the curve appears flatter, and the category represented by age 8 is no longer high in mentions.

For formal testing, we define the critical period of adolescence and early adulthood as running from ages 12 to 29. For some especially visible and dramatic events, the critical period may start at an even younger age than 12, as was the case in 1985 for the Kennedy assassination, while for other events that call for greater historical perspective, the critical period might start at a later age and extend into the 30s. Our inclusion of graphs allows readers to consider alternative specifications, broader or narrower, as we will do also at later points. As a formal test of the hypothesis of critical ages in the case of the Kennedy assassination, we subtract ages 12 and 29 from the year 1963, thereby identifying cohorts born between 1934 and 1951 inclusive. We then create a dummy variable with these cohorts enumerated as 1 and all other cohorts (both those born before and those born after the critical period) as 0. This dummy, together with education, gender, and race treated as control variables, becomes a predictor in a logistic regression of whether a respondent did or did not mention the assassination as one of two especially important events from the past.

For the Kennedy assassination, the hypothesis about the importance of the adolescent and early adulthood years is clearly confirmed, using odds ratios (OR):

1985: OR = 3.06,  $p < .001$

2000: OR = 2.42,  $p < .001$

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usually five years but extended slightly at the youngest end of the cohort continuum. The top line shows the median age for that category at the time of the event; a minus sign before the median age indicates number of years before birth. (Where an event extended over several years, we show the median age at what we judge to have been the most salient time point [e.g., 1968 for the Vietnam War], which may differ slightly from the midpoint of the time span.) Our 1985 curves are not exactly the same as those reported by Schuman and Scott (1989) because for that study the authors graphed simple percentages, whereas we use logistic regression to control for education, gender, and race, and there are other minor differences as well. However, our reanalysis of the 1985 data leads to essentially the same conclusions as those reported in their 1989 article.

These results are shown in table 4 in the column labeled “JFK Assassination.”<sup>10</sup> For the Kennedy assassination we also repeated these calculations with the critical period defined as 18 to 25, a range favored in some other writings (e.g., Krosnick and Alwin 1989) and essentially the same as Mannheim’s original ([1928] 1952) definition for Germany at the beginning of the twentieth century: the calculation yields slightly smaller but also highly significant odds ratios (2.35 and 1.85 for 1985 and 2000, respectively).

Next, in order to determine whether the apparent decline in odds ratios between 1985 and 2000 was reliable, we add to the regression an interaction term involving time (1 = 1985, 2 = 2000). Although the Kennedy assassination is mentioned less frequently in 2000 than in 1985 and its relation to critical period looks somewhat weaker, the effect does not differ significantly by year, as shown in the JFK column in table 4. One further set of calculations was carried out in order to determine whether responses for the critical period differ from *both* those cohorts born earlier than the critical ages and those born later than the critical ages, and not simply from a combination of the two that could depend largely on one or the other. In the case of the Kennedy assassination, each of the comparisons yields highly significant odds ratios ( $p < .001$ ) for both 1985 and 2000, as reported in table 4. Thus, for the Kennedy assassination we conclude that the critical period hypothesis is strongly supported. Not only in 1985, but some 15 years later in 2000, the assassination is disproportionately recalled as especially important by those who were in their adolescence or early adulthood when it occurred. Moreover, the conclusions drawn from the formal calculations in table 4 are quite consistent with the full visual picture presented by figure 1, which testifies to the robustness of the results.<sup>11</sup>

Educational attainment, however, shows no relation to mentions of the Kennedy assassination in either 1985 or 2000, as also indicated in table 4. We tested its effects in other ways as well, including limiting the sample in 2000

10. Note that in order to maintain comparability so far as possible between the 1985 and 2000 data, the calculations in table 4 for the JFK assassination, World War II, Vietnam, and the Depression do not include cohorts that entered the population after 1985, though if all 15 categories are used (as they are for the end of communism and the Gulf War, where there were no 1985 comparison data), there are no important changes in either odds ratios or significance levels. (The figures do graph predicted probabilities for all 15 cohort categories for the 2000 data.) In addition, we replicated the table 4 regressions for the JFK assassination within the categories of education (dichotomized), gender, and race; no sign of statistical interactions appeared.

11. We considered one possible artifact in figure 1 that could limit a generalization about the importance of a critical period. The part of the figure that represents respondents who were in their 30s or older in 1963 includes many who would have mentioned World War II because of its obvious importance. If that particular event tended to preclude mentions of the assassination by cohorts from 1908 to 1937 in the figure, our conclusions would be limited to the period that included World War II and would thus not extend to a future period lacking an event of comparable impact. Therefore, we repeated the tests in table 4 for the Kennedy assassination after first excluding all those who had given World War II as one response. The table 4 results when thus amended continue to provide highly significant support for a critical period effect, including an effect due to the comparison of the critical ages with those who were older at the time of the assassination.

**Table 4.** Relations of Event Memories to Critical Years and Education in 1985 and 2000, with Gender and Race Controlled

	JFK Assassination	Vietnam War	World War II	Great Depression	End of Communism	Gulf War
Date of event	1963	1965-73	1941-45	1929-40	1989-91	1991
Critical years	1934-51	1936-61	1912-33	1900-28	1960-79	1962-79
1985: odds ratio for critical years vs. other years	3.06 (.001)	3.61 (.001)	2.41 (.001)	2.82 (.001)	NA	NA
2000: odds ratio for critical years vs. other years	2.42 (.001)	2.10 (.001)	1.96 (.001)	1.30 (.22)	1.58 (.001)	2.99 (.001)
Interaction: critical years × survey year	0.79 (.40)	0.60 (.02)	0.80 (.20)	0.45 (.02)	NA	NA
1985: critical years vs. older years	5.71 (.001)	5.71 (.001)	1.69 (.08)	NA	NA	NA
1985: critical years vs. younger years	2.01 (.01)	1.27 (.30)	2.50 (.001)	3.08 (.001)	NA	NA
2000: critical years vs. older years	4.29 (.001)	3.49 (.001)	6.06 (.09)	NA	1.56 (.001)	3.63 (.001)
2000: critical years vs. younger years	1.98 (.001)	1.38 (.09)	1.95 (.001)	1.30 (.22)	2.26 (.03)	0.71 (.21)
Education in 1985	0.95 (.57)	1.16 (.01)	1.45 (.001)	1.35 (.002)	NA	NA
Education in 2000	0.99 (.90)	1.26 (.001)	1.47 (.001)	1.49 (.001)	1.44 (.001)	0.92 (.24)

NOTE.— $N = 1,369$  for 1985 survey data and  $N = 2,907$  for 2000 survey data (cohorts later than 1967 omitted) for first four events.  $N = 3,749$  for end of communism and Gulf War (all 15 cohorts included).

NA = not ascertained (no cases that year or for the Depression too few cases for relevant cohorts). Education in this table is treated as a continuous variable with five levels (0-11, 12, 13-15, 16, 17+ years of schooling). The  $p$ -values are given below each of the odds ratios, with significance levels of  $p = .05$  or less in bold.



to those who were too young to have experienced the event itself, but none of the results approaches significance. Unlike other past events to be considered, learning about and remembering the Kennedy assassination seems to occur equally at all levels of educational attainment.<sup>12</sup>

The Vietnam War began just two years after the Kennedy assassination, and since it extended over some eight years in total (1965 to 1973), we can identify birth cohorts from 1934 to 1961 as having been in adolescence or early adulthood at some point during the war.<sup>13</sup> The shape of the relationship of collective memories of Vietnam to birth cohorts in figure 2 fits the critical period hypothesis reasonably well in both 1985 and 2000: mentions of the war are significantly higher for those in their critical ages, as shown in figure 2 and tested in table 4.<sup>14</sup> The results are equally significant ( $p < .001$ ) if the critical period is defined as 18 to 25. Most of the effect is in relation to older cohorts in the 1985 survey, and the same is true in 2000 when limited to the same few younger cohorts, but if the full cohort continuum of 15 categories is used for the 2000 data, the comparison of critical ages and younger ages does reach conventional significance ( $p = .02$ ), as is also apparent in figure 2. In any case, we see again that simply having been alive during the Vietnam War, rather than having lived through that war as an adolescent or young adult, was not crucial; indeed those born after the Vietnam War were more apt to mention it than those beyond their twenties when it occurred.

Table 1 revealed a large overall decline in memories of the Vietnam War between 1985 and 2000, and as figure 2 suggests and the interaction term in table 4 confirms, this was partly due to some decrease in the cohort effect. Nevertheless, the substantial preservation of the shape of the curve in 2000 indicates that memories held by cohorts that experienced the war during their critical ages remained stronger than memories by other cohorts.<sup>15</sup>

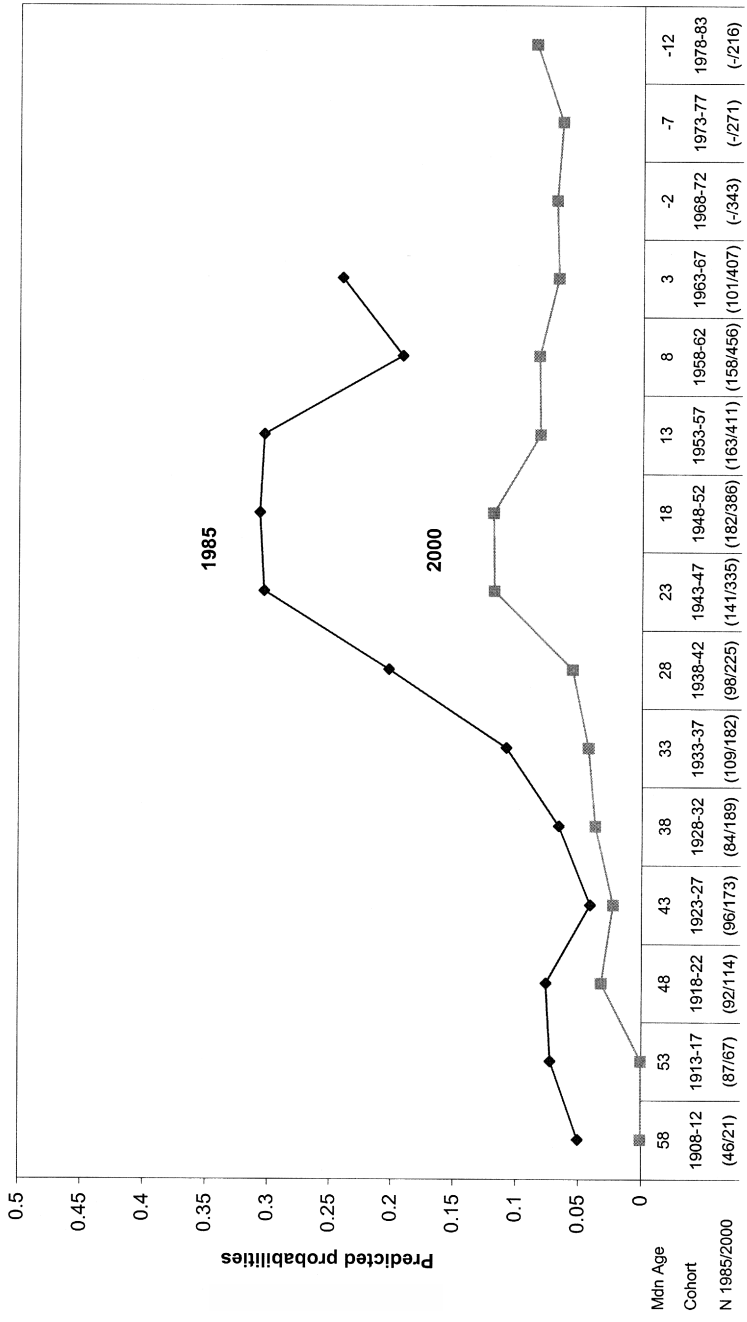
At the same time, and unlike the Kennedy assassination, the greater the educational attainment, the more likely Vietnam was to be mentioned as important in both 1985 and 2000 ( $p < .01$  in both years). However, figure 3

12. Although our main concerns are with cohort and education, in the case of the Kennedy assassination, women are significantly more likely than men to mention the event (odds ratios: 1.58 and 1.53,  $p < .05$  in both years). A similar result occurred in data from Israel regarding the assassination of Itzak Rabin (Schuman, Vinitzky-Seroussi, and Vinokur 2003), and such gender effects may be related to Davis's (1999) finding that women have stronger memories than men for emotionally meaningful events from childhood.

13. The most important year of the Vietnam War from the standpoint of public attention was probably 1968, since it saw the largest number of U.S. troops in Vietnam (over half a million), the largest number of American fatalities (over 14,000), and such important incidents as the Tet Offensive (Karnow 1983; Mueller 1973). If we use 1968 as a single point for defining cohorts, we obtain essentially the same results as with the larger range.

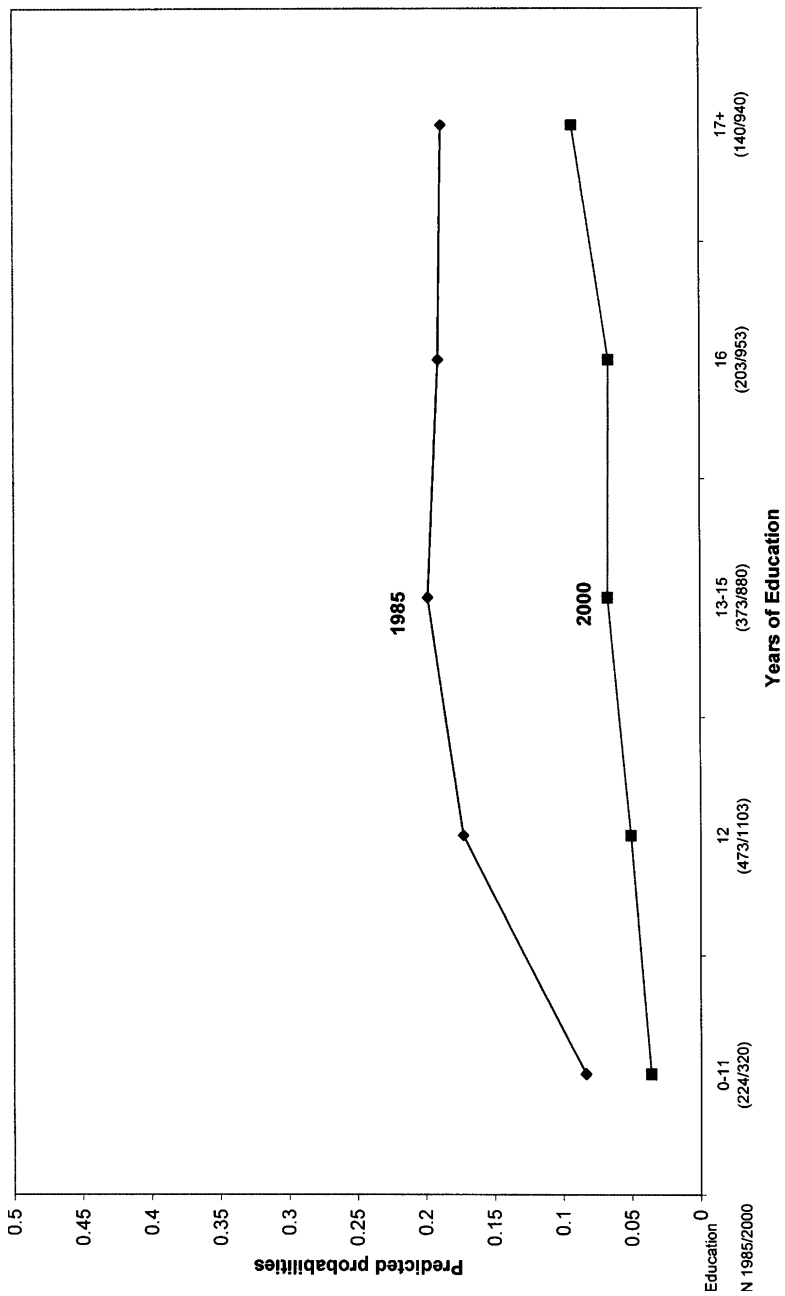
14. Where an event extends over more than one year, we subtract 29 from the starting year and 12 from the ending year.

15. We note in figure 2 an upturn in mentions of the war by the youngest cohort in 1985 and again in 2000. This does not appear to be a cohort effect as such, since quite different birth years constituted the youngest cohorts in the two surveys. We discuss its possible meaning below when considering the Great Depression.



Birth Cohorts, with Median Ages in 1968

**Figure 2.** Vietnam War memories by year and cohort, with education, gender, and race controlled.



**Figure 3.** Vietnam War memories by year and education, with cohort, gender, and race controlled.

shows the relationship to be somewhat different in the two years. In 1985 only about 8 percent of those with less than 12 years of education mentioned Vietnam, while it was mentioned by over twice as many people in each of the four higher educational levels. However, the four levels themselves do not vary significantly. In 2000 mentions of Vietnam were appreciably lower than in 1985 at each level of education, but there is a fairly monotonic pattern of increasing proportions across levels of education. Thus, in the relatively brief period between the end of the war in 1973 and the 1985 survey, only those with quite low education were less likely than others to recall Vietnam as especially important; but after the nearly three decades that elapsed between 1973 and the 2000 survey, each increase in education contributed to preserving collective memories of the war.

#### AN EARLY EVENT

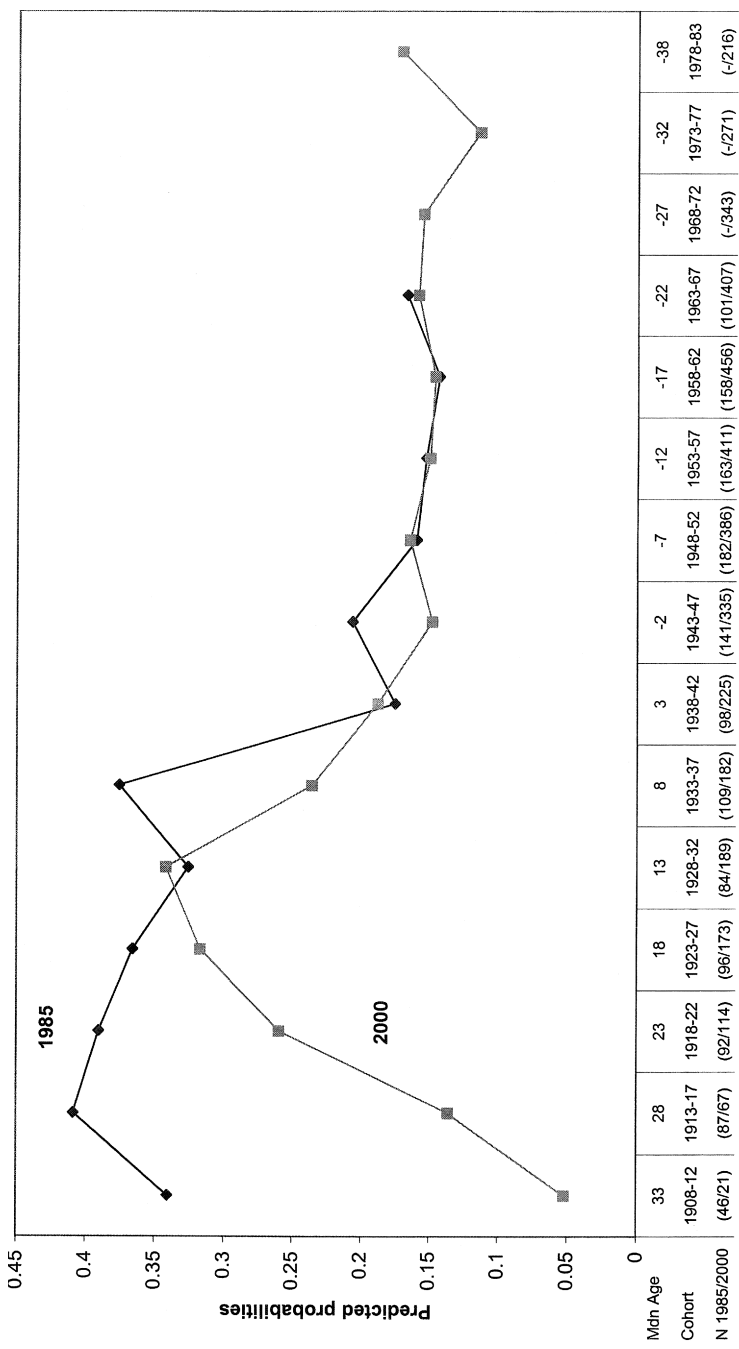
America's involvement in World War II extended from the end of 1941 through 1945, which implies critical birth years of 1912 to 1933.<sup>16</sup> In figure 4 both the 1985 and 2000 surveys show the predicted increase in World War II mentions by those in the critical ages during the war versus all others. Statistical tests in table 4 support the visual picture ( $p < .001$  for both years).<sup>17</sup> In each survey, the greater proportion of World War II mentions holds clearly for comparisons of the critical ages with those younger ( $p < .001$  in both years), but only approaches significance for older cohorts ( $p = .08$  in 1985 and  $p = .09$  in 2000), at least in part because the number of cases for the older cohorts is quite small.

Despite the difference in appearance between the two curves for the oldest cohorts in figure 4, the effect of critical ages versus other years does not change significantly between the two surveys.<sup>18</sup> Indeed, except for the oldest cohorts, figure 4 is remarkable for how closely the curves for the two years track, in contrast to figures 1 and 2 where the proportions of mentions by most

16. If we wished to be perfectly precise in dating events, we would treat 1941 as involving less than one month of the year, but the hypothesis concerning critical ages does not call for such a high degree of precision at this point in the research. Our results are generally robust in the face of small variations in boundary definitions, though how birth cohorts are grouped does have an impact on the appearance of graphs (see n. 17 below).

17. The results are equally significant ( $p < .001$ ) if the critical period is defined as 18 to 25. We should note that the irregularity for the 1985 distribution in figure 4 is an accidental function of cohort category cut points. A much smoother curve appears in Schuman and Scott (1989), where the cut points were slightly different, with a peak for a 1921–25 category (Americans who were 16 to 24 years old during the 1941–45 war period). Ideally we would show cohorts by annual birth years without grouping, but there are too few cases, even in these relatively large samples, for that to be practical.

18. Of the two oldest cohorts in 2000 that are particularly low in mentions of World War II, the largest proportion (41 percent) gave "don't know" responses, and the rest were scattered over many categories including the Depression (9 percent). In the 1985 survey the same two cohorts gave only 15 percent "don't know" responses; they were of course younger at that point and less far removed in time from World War II and other early events.



Birth Cohorts, with Median Ages in 1943

**Figure 4.** World War II memories by year and cohort, with education, gender, and race controlled.

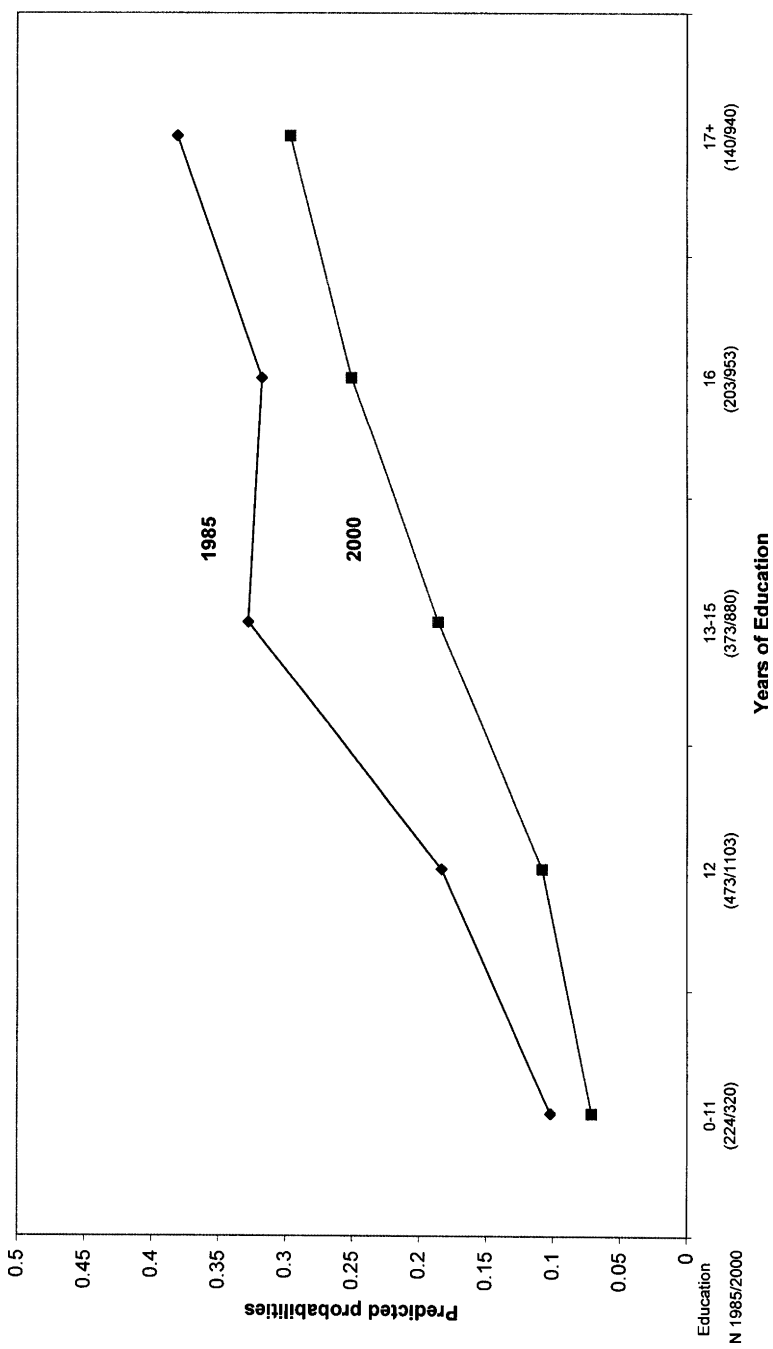
cohorts, and specifically the critical period ones, dropped between 1985 and 2000. This consistency provides additional evidence for the “staying power” of collective memories of World War II, which was noted earlier in the panel data (the high proportion of individuals giving World War II responses at two points in time). Furthermore, the most striking feature of both curves is the precipitous drop shown by the cohorts that came of age immediately after the end of the war, starting with those born between 1938 and 1942. These Americans were too young to have had much personal awareness of the conflict while it was going on, but were in early adulthood at the time of the Kennedy assassination and then the beginning of the Vietnam War, so events from the 1960s should have dominated their immediate memories.

Figure 5 shows the probability of mentioning World War II to be strongly, and generally monotonically, related to education. In both 1985 and 2000, those at the highest level (17 or more years of education) were about four times more likely to mention the war as were those with less than a high school education. Table 4 confirms the relationship as highly significant in both surveys.

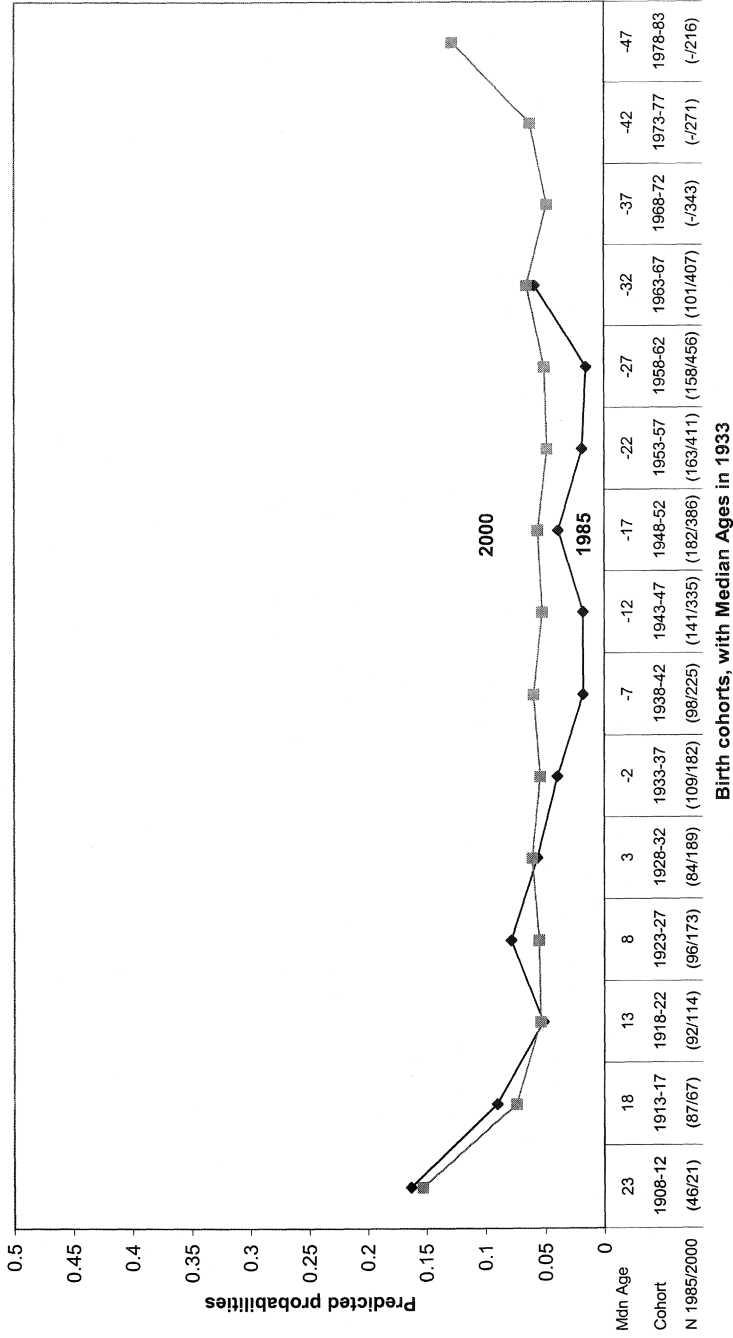
#### A RESURRECTED EVENT

We saw earlier that overall mentions of the Great Depression actually increased in 2000 over their frequency in 1985, even though the proportion of the population that had experienced the Depression had declined appreciably over the 15-year period as a result of mortality. In figure 6 we can see that the small remaining oldest cohort category in our sample, with a median age of 23 during the Depression years, recalled that event more than later cohorts, as would be expected. The critical period effect is significant for the 1985 survey in table 4, but although still visible in the figure for 2000, the odds ratio is no longer significant, and the larger picture is of a consistent level of mentions of the Depression higher than in 1985 for most cohorts born after the 1930s. Evidently it is not personal memories of the Depression itself that are mainly being expressed in the 2000 survey, but rather memories produced by later learning in the context of then recent economic troubles. That later learning is important is also shown by the significant and generally monotonic relation between mention of the Depression and education, as reported in table 4, for both the 1985 and 2000 surveys.

Earlier we noted upturns in mentions of World War II and Vietnam by the youngest cohorts in both 1985 and 2000, and similar upturns are visible in figure 6 for the Depression. The upturns may be due to chance—these two cohort samples may just happen to be more knowledgeable than most others—but if not, their appearance implies an age effect that identifies respondents from the years immediately after high school completion. An interesting possibility is that the upturns reflect a temporary boost in knowledge from those who have just completed their high school educational experience. This interpretation



**Figure 5.** World War II memories by year and education, with cohort, gender, and race controlled.



**Figure 6.** Great Depression memories by year and cohort, with education, gender, and race controlled.



cannot be confirmed more definitively with our data, and it will require future exploration with additional comparisons of post-high school and later cohorts.

#### TWO RECENT EVENTS IN 2000

The end of communism and the 1991 Gulf War had occurred only a decade before our 2000 survey, and although no comparison is possible with 1985 data, it is useful to briefly examine cohort and education effects for both events. The “end of communism” consists of mentions of that term itself and also of references to the fall of the Berlin Wall and to the end of the Cold War. We used the range 1989 to 1991 to date the total event for the American public (Remnick 1993) and include cohorts born between 1960 and 1979 to define critical ages. The hypothesis of a critical period is clearly supported in both figure 7 and table 4 ( $p < .001$ ), with the reliability of the effect due mainly to the comparison with older cohorts, though it also reaches significance ( $p = .03$ ) in relation to the small number of younger cohorts.<sup>19</sup>

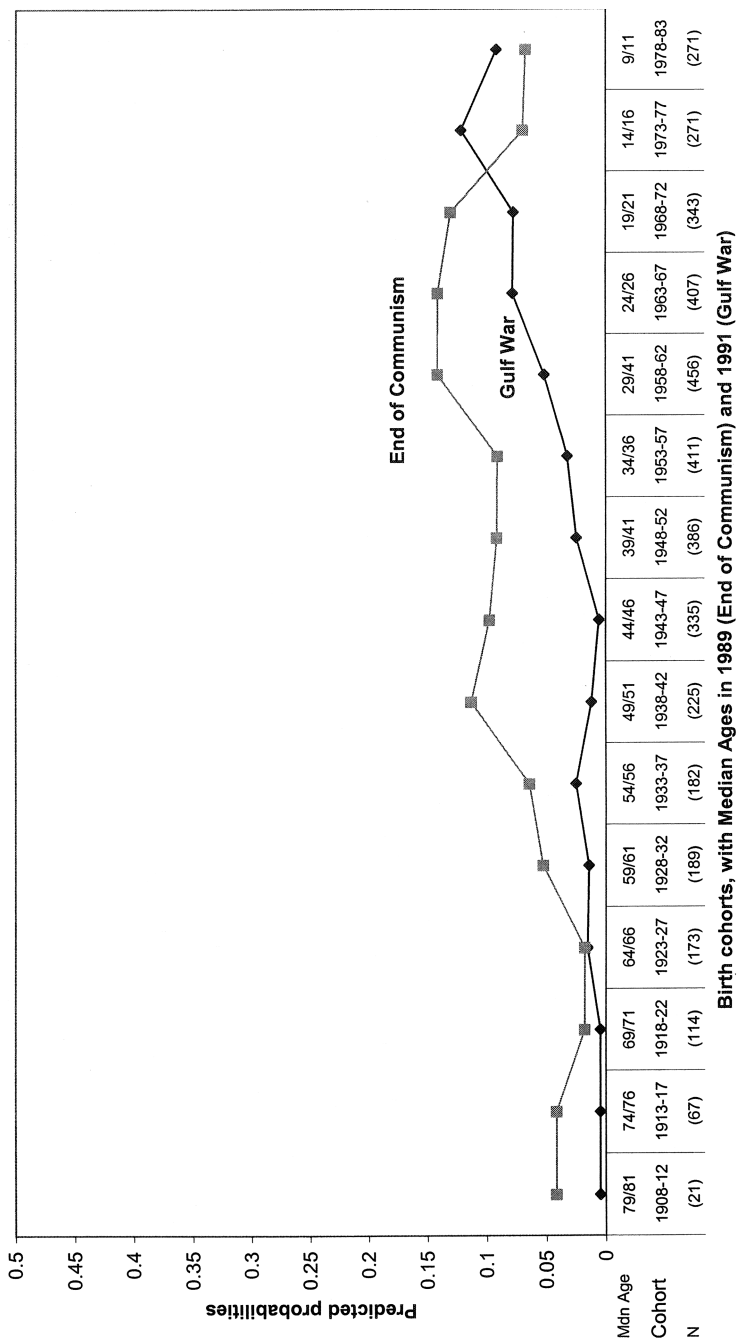
The brief but intensive Gulf War over Kuwait took place in early 1991 and should be remembered most by those born between 1962 and 1979. This expectation is supported in figure 7 and table 4. Older cohorts give the Gulf War response least often, with hardly anyone over the age of 40 mentioning it at all. The highly significant effect for the critical ages is based entirely on the comparison with older cohorts, probably because there are too few younger cohorts to allow a meaningful comparison at that end.

Although the 1991 Gulf War and the end of communism both show the predicted cohort effects based on experience during their similar critical years, the two show different relations to education, as indicated in table 4 and figure 8. The relation for the end of communism is monotonically positive across the five levels of education, whereas education does not have a significant effect in the case of the Gulf War and there is even a slight negative trend. The importance of the collapse of communism and its attendant complexities was recognized more clearly by those with greater education or its correlates, whereas the simpler military drama of the Gulf War made as much of an impression on those with less education as it did on those with more education.

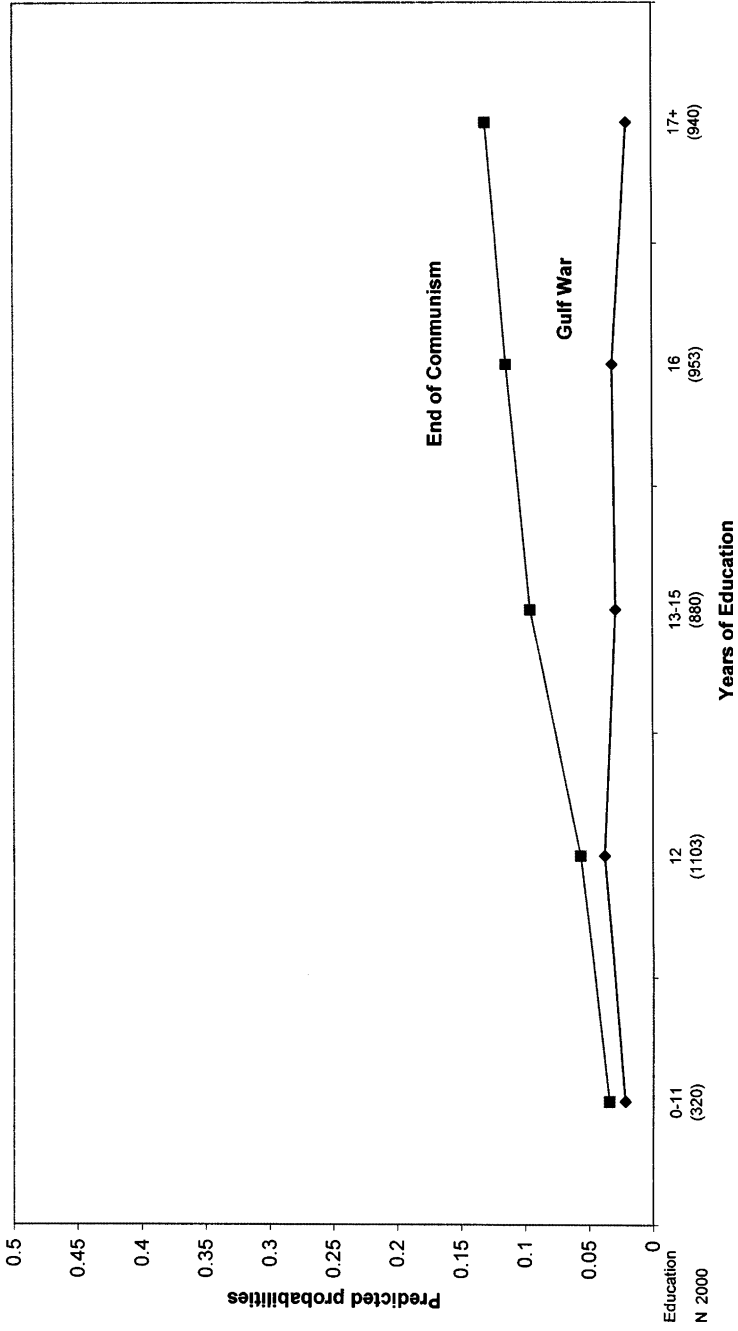
#### SEPTEMBER 11, 2001

The terrorist attack took place six weeks after our 2000 survey was completed at the end of July, and we draw on post-9/11 survey data, gathered in late 2001

19. Figure 7 also shows a secondary plateau of mentions by those born between 1938 and 1957—cohorts who had entered adolescence soon after the beginning of the Cold War. We can speculate that such “Cold War cohorts,” though beyond their critical ages when the Soviet debacle took place, were more sensitive to the ending of the Soviet threat than were cohorts who had been born earlier in the century. This would be a case where historical perspective based on lived experience would have had a distinctive role in collective memory for those in their thirties and forties when the Cold War suddenly ended.



**Figure 7.** End of communism and Gulf War memories in 2000 by cohort, with education, gender, and race controlled.



**Figure 8.** End of communism and Gulf War memories in by education, with cohort, gender, and race controlled.

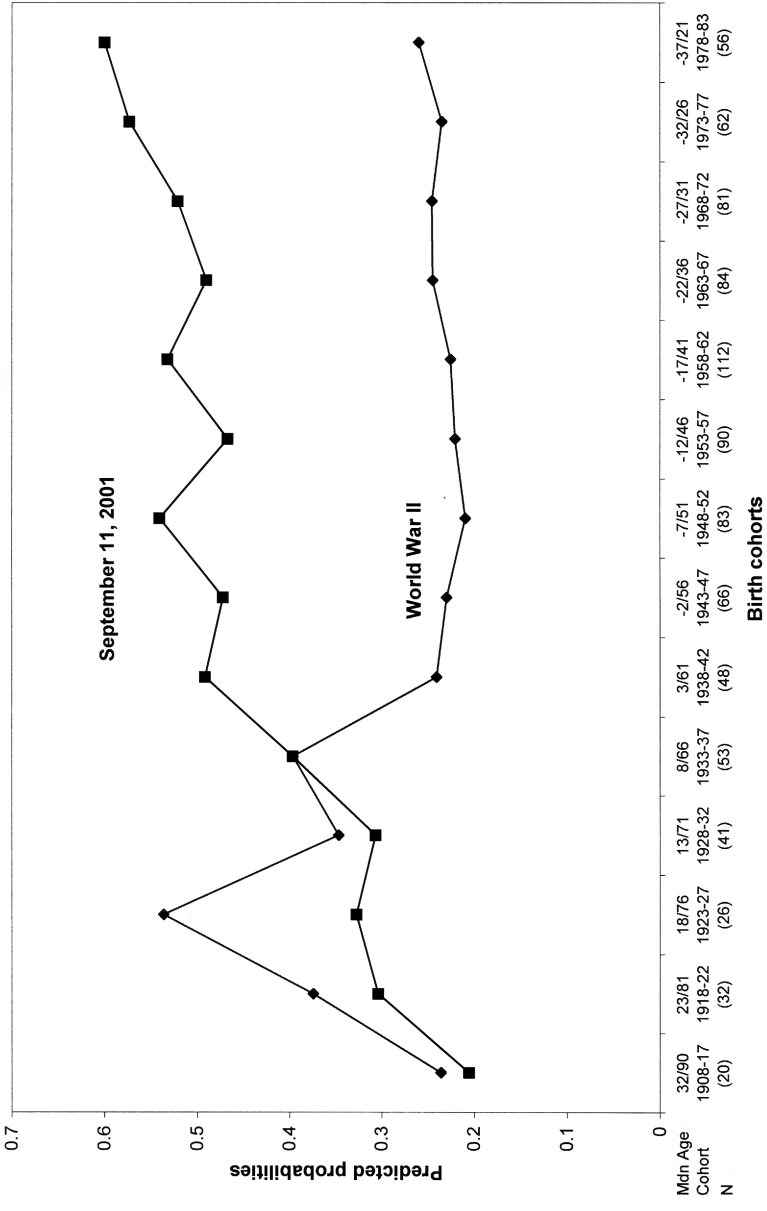
and early 2002, to examine memories of the event. Mentions of September 11 by birth cohorts are shown in figure 9, along with mentions of World War II from the same post-9/11 sample for comparison purposes, though limited resources constrained our post-9/11 sample size to be much smaller than in 2000.<sup>20</sup> For cohorts born before 1938 and thus old enough to have personally experienced World War II, that war is mentioned as much or more often than is September 11. Once we reach cohorts born after World War II or those very young during that war, memories of September 11 predominate. The gap between mentions of the two events becomes especially great among the two youngest cohorts who were in their adolescence or early adulthood in 2001, suggesting that it is for these cohorts that September 11 will “stick” most completely, just as World War II did for the cohorts in our sample who had experienced that war during their own adolescence or early adulthood. It is quite possible that in a few years those who were well beyond their twenties in 2001 will mention September 11 much less frequently than they do now. Because of the recency of the 9/11 attack when the follow-up survey was carried out, it is also not surprising that there is no relation of mentions of the attack to amount of schooling; its presentation on television and by every other medium of communication made the event available at all levels of education.

### **Three Complications: Non-Datable Changes, Compound Events, and Memory versus Judgment**

#### NON-DATABLE EVENTS

Tables 1 and 2 include five categories of response that are not distinct events, but rather changes lacking clear beginning or ending dates, and are therefore not susceptible to the kind of critical period effect that has been our focus. “Advances in Communication and Transportation,” for example, consists of mentions of such things as the development of television and jet planes, as well as occasional, more general responses like “air travel.” Since the content almost always concerns changes dating from the earlier part of the 70-year span between 1930 and 2000, we did expect the category to be negatively associated with birth cohort treated as a continuous variable. This is clearly the case in regressions that include our standard controls of education, gender, and race. Odds ratios for annual birth cohorts are .98 ( $p < .001$ ) in both 1985 and 2000, and there is no indication of a relation to education.

20. The two oldest cohort categories are combined in figure 9 because they include only 5 and 15 cases, respectively, but the base *N*s are still quite small for the oldest three categories and are not large even for younger cohorts. Thus the points plotted are more approximate than in other figures. In addition, most respondents in the oldest cohort were at least 85 years of age and 8 out of the 20 gave “don’t know” in the post-9/11 sample.



**Figure 9.** World War II and September 11 memories in post-9/11 survey by cohort, with education, gender, and race controlled.

The category of mentions labeled “Computers and the Internet” also lacks precise dates, but since the responses placed in this category refer to recent technological developments, they should be given disproportionately by younger Americans. This does happen in 2000 (odds ratio = 1.01,  $p < .001$ ), but there is no relation in the 1985 survey, where the percentage of computer mentions was quite small (1.6 percent first mentions, 3.5 percent any mentions). At that time, education was the only background factor associated with giving the development of the computer as an important event ( $p < .001$  in 1985 and 2000). We will be able to throw further light on the puzzling 1985 data on cohorts and computers below when we consider memory versus judgment.

Mentions included in the “Nuclear War” category might have referred back to the 1940s and need have no clear ending date at all. However, nuclear war is given disproportionately by younger Americans in 1985 ( $p < .001$ ), an association that is perplexing at first. It begins to make sense once placed in the context of the arms race in the 1980s. Just two years before the survey in 1983 Ronald Reagan delivered his widely publicized speech proposing a new anti-missile defense (quickly labeled “Star Wars”) against what he saw as the looming Soviet nuclear threat, something young people were hearing emphasized for the first time. By the 2000 survey, however, the Soviet threat seemed completely past. It is no surprise that the proportion mentioning a nuclear threat almost disappears from table 1, and there is no longer any relation to cohort.

“Civil Rights” responses were quite general, often simply using that broad term or a related reference to race. The civil rights movement reached its peak mainly in the late 1950s and early 1960s, but the term has been freely used to refer to both earlier and more recent years. In our surveys, the response is linked strongly to respondent’s own race: it is given by 35 percent and 26 percent of blacks in 1985 and 2000, respectively, and by less than 5 percent of whites in either year. The black sample is too small for full analysis, but it does show both in 1985 and 2000 evidence of a critical period effect, having been mentioned primarily by those in their adolescent or early adult years during the height of the civil rights movement in the 1950s and 1960s, with a sharp decrease in mentions by those ages in later years. There is no sign of an overall effect for whites, but Griffin (in press) has reanalyzed the 1985 data and reports a critical period effect for southern but not nonsouthern whites, which he interprets as due to the much greater impact of the civil rights movement in the South than in the North. Mentions of civil rights are positively associated with education among both blacks and whites.

“Space Exploration” is the last of the broad changes that is difficult to date precisely, and it presents the most puzzling results in our entire study. Within the space exploration category there were sufficient mentions of the 1969 moon landing (5.3 percent in 1985 and 3.7 percent in 2000) to allow treating such responses as specifying a distinct datable event; yet there is no sign of

any relation in either survey year of birth cohort to mentions of the moon landing, or of space exploration more generally. Nor is the response related to years of education, despite its scientific/technical nature. Perhaps because the event itself was entirely unprecedented, even for the oldest members of the population, it does not show the same kind of restriction to critical ages as do other events.<sup>21</sup> In any case, since for other datable events—the Kennedy assassination, Vietnam, World War II, the Gulf War, and the end of communism—the evidence for critical period effects is strong, we treat the negative result for mentions of the moon landing not as a disconfirmation of the general hypothesis about critical period, but as an important exception calling for further investigation.<sup>22</sup>

#### COMPOUND EVENTS

Between events like the Kennedy assassination that are singular in nature and vague changes like advances in communication and transportation technology are events that include sub-events that are themselves distinctive. For example, in the 2000 survey some respondents mentioned not only computers as a general term, but also the Internet as a separate term. Given the more recent development of the Internet, it is plausible to expect those mentioning it to be somewhat younger than those who mentioned only computers. There is a supportive trend in this direction for the 2000 survey: those mentioning only the computer have a mean birth year of 1955.1 and those mentioning the Internet (with or without mention of computers) have a mean birth year of 1957.7 ( $F = 2.88$ ,  $df = 1,369$ ,  $p = .09$ , controlling for education, gender, and race).

Responses that were classified as about the end of communism often used just such general terms as the dissolution of the Soviet Union or the end of the Cold War, but some referred specifically and only to the fall of the Berlin Wall in 1989. Because the latter was simpler to comprehend than the full dissolution and also provided much more dramatic images on television, we

21. The *content* of the 1985 responses does show a significant relation to birth cohort: the oldest respondents explained their mention of space exploration with words like “amazing” and “fantastic,” something they had never expected to see happen; younger respondents tended to accept space exploration as a given and spoke of future challenges such as living on other planets (Schuman and Scott 1989, pp. 376–77). Our 2000 survey did not include the “why” follow-up question that allowed Schuman and Scott (1989) to explore the content of event mentions, but we recently obtained such data from 2001 for moon landing content and have been able to replicate the main 1985 results. The number of cases is too small to point clearly to particular cohorts, but among Americans mentioning the moon landing there is a highly significant age difference between those who simply speak of amazement at the event (mean age in 1969: 25.5) and those who focus on the future scientific and related possibilities it created (mean age in 1969: 13.8): for the 12-year gap in age, with education, gender, and race controlled,  $F = 7.8$ ,  $df = 1$ ,  $p = .008$ . (We are grateful to Dr. Ronald Kessler who made this addition possible by adding the necessary questions to his larger study of mental health issues.)

22. See Lieberman (1992) on occasional negative results in the context of positive support for a general proposition; Mayr (1997) makes a similar point for biology.

expected memories of the destruction of the Berlin Wall to be given by respondents who were younger than those who mentioned the end of communism or the end of the Cold War in general terms. Consistent with this expectation, the fall of the Berlin Wall was given by significantly younger cohorts (mean birth year of 1958.8) than those who gave the more abstract responses about the end of communism or of the Cold War combined (mean birth year of 1955.7):  $F = 5.67$ ,  $df = 1,390$ ,  $p = .018$ . Thus, although the conceptualization of an event may encompass both concrete and abstract elements, its components should show relations to birth year consistent with the spirit of the hypothesis about cohort effects.

#### MEMORY VERSUS JUDGMENT

The open question used to elicit important past events would seem to require survey respondents to go through two steps. One step is to recall national and world events and changes from the past that might conceivably be regarded as important.<sup>23</sup> The second step is to decide which of the ones that come to mind should be mentioned as especially important, and then to do the same for a second mention. The first of these steps can be thought of as primarily one of memory, the second as one of judgment. The final responses given are thus a mixture of memory and judgment, though these may occur simultaneously, as when the response "World War II" immediately springs to mind for a respondent.

Schuman and Scott (1987) carried out an experiment to determine what would happen if the two stages are explicitly separated, although their motivation had to do with the rarity of computer responses in their 1985 data, as shown also in our table 1. They had noted that in other parts of their larger questionnaire the computer was mentioned quite frequently as a source of concern; for example, when respondents were asked what problems children "born today" face, a substantial number spoke of the need to learn about computers in order to obtain employment in the future. The authors hypothesized that despite these concerns, the development of the computer was not conceptualized by most respondents as a potential answer to the open question about important national and world events and changes. They tested this proposition by carrying out a randomized split-sample experiment in a 1986 national survey where half the respondents were given the open question we use here, and the other half received a closed version of the question that asked respondents to choose the most important event from among five presented: World

23. That the key word "important" in the question has an initial filtering effect is shown by the absence of more than a handful of responses referring to events that frequently dominate the daily news. For example, in the 2000 data, no respondent mentioned the O. J. Simpson murder trial as first in importance and only 5 out of 3,884 gave it as a second mention, despite the enormous attention focused on the trial in 1995. Mentions of major sports events are also rare.



**Table 5.** Open and Closed Important Event Responses

	Open	Closed
World War II	39.5%	35.6%
Space exploration	19.3	24.5
JFK assassination	12.9	18.0
Vietnam War	28.3	21.9
Total	100%	100%
<i>N</i>	(124)	(228)

War II, the exploration of space, the Kennedy assassination, the invention of the computer, and the Vietnam War.<sup>24</sup>

In support of the hypothesis, the computer response went from being mentioned by a mere 1.4 percent of the respondents on the open question to 29.9 percent on the closed question ( $\chi^2 = 54.2$ ,  $df = 4$ ,  $p < .001$ ), as well as from fifth to first place among the five events. Moreover, on the closed question, computer responses were positively related to birth cohort treated as a continuous variable, as had been expected, with younger Americans giving the answer more often (odds ratio = 1.02,  $p < .01$ ). We believe that in the mid-1980s the open question could not provide a valid measure of the importance of computers to respondents, for they did not think of the development of computers as an “event” until it was explicitly brought into the frame of reference of the question. However, its conceptualization as an “event” had occurred by the time of our 2000 survey where it was mentioned by nearly 10 percent of the sample and also showed a clear relation to younger age.

Yet if we reanalyze the 1986 data after excluding the computer, the results for the two question forms (shown in table 5) are quite similar for the four remaining alternatives, and the difference between the distributions in the 4 by 2 table does not approach significance ( $\chi^2 = 3.94$ ,  $df = 3$ ,  $p > .10$ ). Thus once an event was recognized by respondents as within the frame of reference of the open question—as signified by its being given by some minimum number of respondents—its importance is seen to be essentially the same regardless of whether “memory” or “judgment” is emphasized by the form of the inquiry. This is an important finding, which, if replicated over a series of events, will testify to the robustness of inquiries about collective memory at the individual level.

24. In the closed question the order of the five alternatives was randomized across respondents, and there was no sign of an order effect. The closed question also offered respondents the option of naming “an event or change different from the ones I mention.” Only 5.4 percent of the total closed sample ( $N = 354$ ) took the option of “other,” a common finding when a list is presented, as another part of Schuman and Scott’s (1987) article illustrated. In the reanalysis that follows, we omit “other” responses from both the closed and the open forms of the question (the latter having 52.2 percent of the original total  $N$  of 347).

## Conclusions

### COLLECTIVE MEMORY AND COLLECTIVE FORGETTING

It is not surprising that events tend to fade from collective memory as the cohorts who personally experienced them disappear, especially since new events are constantly affecting new generations. However, there are two important qualifications to this seemingly obvious proposition. First, in most cases the crucial carriers of collective memories of an event are not all who were alive when the event occurred, but mainly those individuals who experienced the event during their critical ages of adolescence and early adulthood. This was the case for five datable events that we considered where there were enough respondents who were older than their critical ages when the event occurred to allow for the necessary comparisons: World War II, the Kennedy assassination, the Vietnam War, the end of communism, and the 1991 Gulf War. Moreover, for the first three events where further comparison over time proved possible, the critical period effects first discovered in 1985 did not disappear in 2000, even though 15 years had passed from the previous assessment, much more than 15 years had passed from the events themselves, and important new events had happened during the interim. There was evidence of a lessening of cohort effects in some cases, but in none did the effect fade entirely.<sup>25</sup>

A second qualification to the assumption of disappearing cohort effects is the evidence that collective memories of old events can be saved from extinction, at least temporarily, by new occurrences that bring them to mind. This appears to be the case for the Great Depression, probably due to the stock market crash of 2000 and the ensuing economic troubles. It also seems true for World War II and Vietnam, as a direct result of the 9/11 attack. In the case of World War II, if we compare figures 4 and 9 and focus on those respondents who were born after the war had ended (i.e., in 1948 or later) and therefore could not have experienced it directly, mentions of World War II were significantly higher in the post-9/11 survey than in the 2000 survey several months earlier (summing all mentions by cohorts from 1948 on: 26.1 percent to 17.9 percent,  $\chi^2 = 19.26$ ,  $df = 1$ ,  $p < .001$ ). Temporal distance from an event is less crucial than psychological distance.

We also found a striking example of what can be termed “collective forgetting”: the sharp drop after September 11 in collective memories of the event summarized as the “End of Communism.” No doubt many respondents would recognize the Cold War and its ending if tested more explicitly, but given its present lack of salience among respondents’ initial two spontaneous mentions, even such recognition may dim over the next few years. Vietnam and other

25. The single exception to the predicted cohort effect—the moon landing—calls for further investigation, especially since the *reasons* people gave for their mentions of the event do show such an effect.

**Table 6.** Critical Period and Education Effects on Event Mentions

	Critical Period		Education	
	Odds Ratio	<i>p</i>	Odds Ratio	<i>p</i>
JFK assassination	2.42	.000	1.04	.82
Vietnam War	2.10	.000	1.70	.000
World War II	1.96	.000	2.68	.000
Depression	1.30	.22	2.21	.000
End of communism	1.58	.000	2.49	.000
Gulf War	2.99	.000	.84	.29

“hot wars” continue to appear in dramatic films and television broadcasts, and they have the kinds of commemorative sites and occasions that have been found important in preserving collective memories (Schwartz 2001). The collapse of the Soviet Union lacks such vivid reminders for Americans, and in the years to come, collective forgetting by much of the general public of that crucial period in recent American history may well become more literal. Some other past events that were important at one time are also better described in terms of collective forgetting than of collective memory. For example, notwithstanding its institutional legacy (Schudson 1992), the crisis of government known as Watergate was mentioned by only 2.5 percent of the public in 1985 and by well under 1 percent in 2000.

#### COHORT AND EDUCATIONAL EFFECTS

Both personal experience and secondary learning through education contribute to the content of collective memory. There is no simple way to compare their effects, but it is interesting to contrast the odds ratios for the critical period from table 4 with odds ratios for education also dichotomized (0–12 years versus 13 or more years of schooling), with gender and race controlled, using the large 2000 survey sample, shown in table 6. The comparison suggests that both variables had mostly significant effects in 2000, with critical period showing at least as much potency as education. (Tests for interactions between the two dichotomized predictors show none approaching significance for any of the six events.) More speculatively, a preliminary interpretation might be that education tends to be more important for events that call for greater historical perspective (the Depression, World War II, the end of communism), and critical period tends to be more important for events that are simpler and more dramatic (Kennedy assassination, the Gulf War). Our earlier results also suggest that memories *within* the critical age range show a similar variation: those at the younger end of the critical period are especially likely to remember dramatic visual events like the fall of the Berlin Wall, whereas

those toward the older end of the critical period are more likely to remember events that require greater historical perspective, such as the end of Soviet communism and the Cold War.

#### FUTURE INQUIRIES

Several larger issues are raised directly or indirectly by our research. First, one might ask again why adolescence and early adulthood provide the critical period for collective memories. Our own answer is exemplified by the kind of relationship shown in figure 1 for the Kennedy assassination in 1963. Because the assassination was the first major national event that cohorts experienced as they emerged from insular childhood backgrounds, it can be said to have left a permanent mark never to be erased. Even though older cohorts also experienced the assassination, it would have been overshadowed by collective memories of earlier events from their own youth, such as the Depression or World War II. The youngest end of the cohort continuum in figure 1 is even easier to explain, for those born after 1963 had only distant knowledge of the assassination but had their own vivid memories of events like the Vietnam War and the Gulf War. This line of explanation seems sufficient for shared memories of public events, but we should acknowledge that psychologists investigating memories of purely personal events (for example, a first day at college) report similar cohort effects, usually referred to as the "reminiscence bump," and they advance interpretations that overlap only partly with the explanation offered here (e.g., Conway and Pleydell-Pearce 2000; Rubin, Rahhal, and Poon 1998). Hence tests of the several possible explanations are called for, including studies of whether the processes and timing involved in remembering purely personal and larger public events are essentially the same.

In addition, although our results are consistent with a broad definition of the critical period for collective memories as extending between ages 12 and 29, we do not have enough events to determine the boundaries more confidently. Indeed, both boundaries and peaks are likely to vary somewhat for different types of events and in different sociocultural settings (e.g., Conway and Haque 1999), and the evidence we report here has been limited to the United States over the past several decades.

Finally, how much do collective memories shape later attitudes and behavior? There is certainly rich anecdotal evidence of such effects. As an extreme example, Serbian attitudes and actions in recent years were often said to have been strongly influenced by collective memories of Serbia's loss to the Ottoman Turks in a famous battle at Kosovo in 1389! But more systematic evidence of such an impact is hard to locate. In one study of the 1991 Gulf War, there were only limited effects traceable to the competition between two important analogies based on collective memories having different generational locations: appeasement at Munich for the World War II generation vs. a Vietnam-like quagmire for those younger (Schuman and Rieger 1992).

Instead, attitudes created by the rush of new events seemed to overwhelm prior attitudes drawing on collective memories of the past. Perhaps it was the force and velocity of the new events that was determinative, and the influence of collective memories is greater under less pressured circumstances or when the remembered events were more recent. Whatever the case, we need carefully designed research on the effects of collective memories on later attitudes and actions in order to move beyond anecdotal evidence.

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