



# Competing national memories of World War II

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**We assessed the knowledge of 1,338 people from 11 countries (8 former Allied and 3 former Axis) about World War II. When asked what percentage their country contributed to the war effort, across Allied countries, estimates totaled 309%, and Axis nations' estimates came to 140%. People in 4 nations claimed more than 50% responsibility for their country (Germany, Russia, United Kingdom, and United States). The overclaiming of responsibility reflected in these percentages was moderated when subjects were asked to consider the contributions of other countries; however, Russians continued to claim great responsibility, the only country that remained well over 50% in its claim of responsibility for the Allied victory. If deaths in the war are considered a proxy of a nation's contributions, the Soviet Union did carry much of the burden. This study points to sharp differences in national memory even across nations who fought on the same side in the war. Differing national perspectives shape diverse memories of the same complex event.**

collective memory | national memory | national narcissism | public event memory | ethnocentrism

**M**any Allied countries fought in World War II. The issue we address is which of the Allies claim the primary responsibility for the victory. We are studying national memories of the war, and prior work in 2 countries (Russia, ref. 1; the United States, ref. 2) indicates major differences in the way people in even the Allied countries remember the war. This project arises from the study of collective memory, of how groups (small or large) remember their group's shared past and how such memory shapes identity (e.g., refs. 3 and 4). We use "memory" in the sense of collective memory (5, 6), for example, how Americans remember their Civil War or how French people remember the Napoleonic wars, not in the sense of remembering an event that has been personally experienced (episodic memory; ref. 7). However, collectively remembered events often form part of the personal identity for individuals just as personally experienced events do. Such memories (e.g., American memories of the Civil War) can be emotionally charged.

One feature of national memories is often their ethnocentrism, when people of a nation view events through the lens of their own history. After all, countries usually mandate courses on the history of the nation in their educational systems, whereas learning about the history of other nations is much less likely. When university students in 35 different countries around the world were asked what contribution their own countries made to world history, the percentages given were quite high [e.g., Russians gave 61%, India was at 50%, Italy at 40%, and so on (8)]. The total across 35 countries (of 193 in the United Nations) was 1,027%. A recent study showed similar collective narcissism in American citizens within the United States by asking what percentage of US history was due to people of the state in which they were raised (9). The wording of the question even reminded people that there were 50 states in the United States, thus implying that 2% might be a reasonable answer. Despite this feature, people gave very high estimates. For example, Virginians answered

41%, and people from Massachusetts responded with 35%. Iowans were the most modest at 9%, but even that was far above 2%. The total of percentages across residents of the 50 states was 907% (for a replication of this basic finding, see ref. 10).

The authors of these papers argued that several factors may be responsible for such collective narcissism in nations or in regions within nations. Chief among these may be the availability heuristic (11); people weight heavily information that comes to mind easily in answering a question. When asked what percentage of effort their own group makes to a larger enterprise, the contributions of their own group come to mind more easily than contributions of other groups, and thus the rating given may be lopsided in favor of their own group (12). For example, when married couples are asked questions about percentage of effort in carrying out everyday tasks (emptying the dishwasher, taking out the trash), their estimates sum to more than 100% (12). This research showed that individuals are good at remembering instances of their own behavior, but not so much those of their spouse. Thus, they are prone to weight estimates in their own favor. In addition to the availability heuristic, we tend to see our own groups as superior to others (13) and are often prone to my-side bias (14). Further, people often overestimate small percentages of events, even when not estimating their own groups' contributions (15, 16). Any or all of these factors may be involved in the phenomenon of collective narcissism. These studies provide background for the current investigation.

## Significance

**Often today's differences in national perspectives are rooted in how events of the past are remembered by groups, which informs the study of collective memory. National differences in collective memory must be understood so that differences in viewing current events can be appreciated. Our results show that people are highly ethnocentric in viewing their own nation's influence, even in remembering the (nominally) same event: World War II. Understanding the narrative (or narratives) of the people of a country can help us understand their perceptions of current events and how they are likely to act in the future.**

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Citizens of the United States often conceptualize their country's role in Europe during the 2 great world wars of the 20th century in terms of a common narrative or schema (1): European countries became embroiled in war, with Germany as the primary aggressor; the United States sided with its allies England, France, and others but remained on the sidelines and sought to stay there; the war reached a crisis point, and finally the US leaders declared war. A few years later, victory ensued. In short, people in the United States tend to believe “we won the war” in both World War I and World War II. This US narrative of the 2 major European wars of the 20th century is embedded in American textbooks, movies, and novels and reminiscences of soldiers (1).

The American trope that we won the war is not just the view of citizens, but also of some American historians. Regarding economic contributions to World War II, historian Doris Kearns Goodwin wrote “It is no exaggeration to say that America won the war abroad and the peace at home at the same time” (ref. 17). However, we suspect that scholars from other countries would argue that Goodwin, in particular, and Americans, in general, overestimate their contribution to winning the war—especially the war in Europe. For example, Richard Overy, a British historian, argued in 1997 that “Few would now contest the view that the Soviet war effort was the most important factor, though not the only one, in the defeat of Germany” (ref. 18, p. xi).

This article is about differing national memories of World War II (WWII). We view the issue of differing national narratives as critical in international relations because they help inform widely different perceptions of current events. For example, when Russia invaded Georgia in 2008, the narratives of the invasion were markedly different between the Russian view and the Georgian (and international) perspective (19). The same is doubtless true of the Israeli/Palestinian conflict, the controversy between Turkey and Armenia or between India and Pakistan, and many similar controversies between nations or peoples across the world.

The natural tendency in every country is to learn of an international event such as war from the perspective of one's own country (20, 21). Americans tend to hold the same general narrative for the Pacific theater of World War II as they do for the European theater in seeing their country as responsible for victory, even though the many British, Chinese, Australians, New Zealanders, and others who fought and died in the Pacific front of war may have a different understanding. Other nations remember events surrounding the war quite differently and have a different narrative (22). In particular, people of the former Soviet Union remember the war in Europe quite differently from Americans (1, 23), as we also show in our results.

Our focus in study 1 is how people of each of 11 countries remember WWII. We surveyed 1,338 people about their knowledge of and attitudes about WWII or the Great Patriotic War, as it is called in the countries of the former Soviet Union.\* Our sample included at least 100 usable surveys from natives of each of 11 countries (*SI Appendix, Tables S1 and S2*), all of whom knew English well enough to complete the questionnaire. These included people from 8 former Allied powers (Australia, Canada, China, France, New Zealand, Russia [as a proxy for the Soviet Union], the United Kingdom, and the United States) and 3 former Axis powers (Germany, Italy, and Japan).

The critical question in study 1 concerned what percentage of the war effort participants' countries were responsible for. This question was asked in 2 ways. First, for Allied countries, subjects were asked, “In terms of percentage, what do you think was [your country's] contribution to the victory of World War 2? In other words, how responsible was [your country] for the victory of the

war?”. Subjects were asked to drag a slider from its starting point at 0 to indicate their desired answer (e.g., 20%; the scale ranged up to 100%). Next in the survey, however, subjects were asked the question a different way: “In terms of percentage, how much do you think each of the following countries contributed to the Allied victory of World War 2? In other words, how responsible was each country for the Allied victory of World War 2?” with the names of 8 Allied countries (including the subject's own country) listed in alphabetical order and with a ninth listing of “Other countries.”

People in 3 Axis countries answered a question about their country's contribution on the losing side. The wording was, “Germany, Italy, and Japan fought on the same side for 6 years during World War 2. What percentage of the war effort was provided by [your country]?”. However, the second question for people from Axis countries was the same as the second question for the Allied countries (asking about the percentages of Allied countries' efforts in the war and having them sum to 100%).

The primary results in this paper concern the “percentage contribution” questions about the war, revealing different national perspectives on which of the Allied countries were most responsible for winning the war, as well as views of Axis people on their country's contribution to the effort on the other side. For study 1, we first also report data on general knowledge multiple-choice questions about the war. Study 2 was conducted to replicate the general pattern observed concerning the percentage questions for Axis countries in study 1, and students from Germany, Italy, and Japan completed the same questions in their native languages rather than in English.

## Results: Study 1

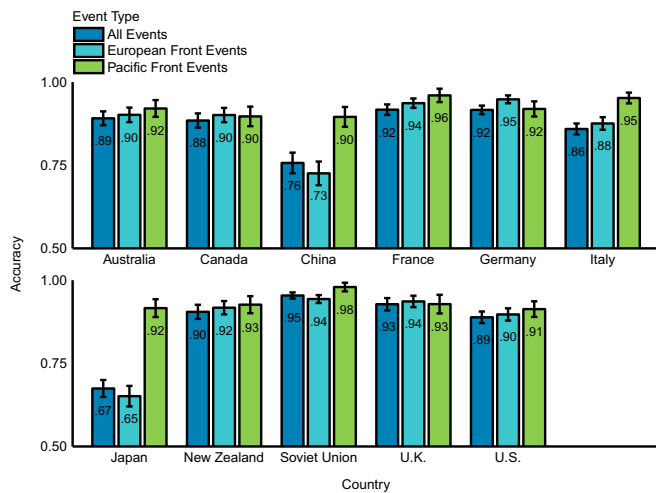
**Multiple-Choice General Knowledge Test on WWII.** The dark blue bars in Fig. 1 show the proportion of correct responses on the general knowledge multiple-choice test (24). Mean accuracy differed among the 11 countries,  $F(10, 1,327) = 69.98$ , mean squared error (MSE) = 0.01,  $p < 0.001$ ,  $\eta^2 = 0.35$ , and Bonferroni-corrected post hoc tests were calculated to examine these differences in greater detail. In most countries, mean accuracy ranged either slightly below or slightly above 90% correct. The post hoc tests showed that there were significant differences even between these rather similarly performing countries (e.g., participants from Russia outperformed those from most other countries, all  $ps \leq 0.022$ , apart from the United Kingdom, France, and Germany, all  $ps \geq 0.249$ ). However, the most notable differences arose between participants from Japan, China, and the rest of the sample. With a mean accuracy of 67%, participants from Japan performed worst and indeed significantly worse than participants from all other countries, all  $ps < 0.001$ . Chinese participants performed better than the Japanese participants ( $p < 0.001$ ), but, with a mean accuracy of 76%, they still performed significantly worse than participants from the other 9 countries, all  $ps < 0.001$ . Our general knowledge test inadvertently included more events from the European than from the Asian theater, and we thought that this might account for the difference.†

To follow up on these unanticipated differences, we split the test questions into items that clearly concerned the European vs. the Pacific theaters of the war.‡ We had not designed the questions with this distinction in mind, so different numbers of items exist in the 2 groups, as described in the footnote. Notably, in some cases, the overall proportion correct calculations was lower

\*M.T. reported that education in Japan focused only on the Asian theater of World War II.

†Ten of 15 test questions dealt with events on the European theater of the war; only 3 dealt specifically with events on the Pacific theater. One further question could not be attributed to either side of the war and it was therefore discarded for this additional analysis (“What country lost the most lives in World War 2?”), whereas another question applied to both theaters of the war (“In what year did World War 2 end?”) but we used it for the Pacific theater. Thus, the analyses comprise 11 test items for the European theater of the war (items 1, 2, and 7 to 15 in *SI Appendix, Table S4*) and 4 test items for the Pacific theater (items 4 to 6 and 12 in *SI Appendix, Table S4*).

\*We tested Russians, so we use that name when we refer to our subjects. However, Russia was part of the Soviet Union during the war, so we refer to the Soviet Union as the entity whose soldiers fought in the war in presenting and discussing our results.



**Fig. 1.** Mean accuracy on the general knowledge test, separately for all 11 countries. Accuracy is depicted as 1) overall proportion correct, 2) proportion correct for questions relating to events that occurred in the European theater of the war (11 of 15 questions), and 3) proportion correct for questions relating to events that occurred in the Pacific theater of the war (4 of 15 questions). One of the 15 questions applied to both the European and Pacific fronts of the war, and another applied to neither front. Thus, the overall proportion correct calculation includes 1 additional question not included in the European or Pacific front accuracy calculations. Performance on this additional question was quite low, in some cases leading to lower overall accuracy than on the European and Pacific fronts, individually. Error bars represent 95% confidence intervals.

than the proportion correct calculations for the European and Pacific theaters of the war, individually. This occurred because the overall proportion correct calculations included 1 additional question not included in either the European or the Pacific theater calculations. Performance on this additional question was quite low (an average of 0.62 correct across all countries).

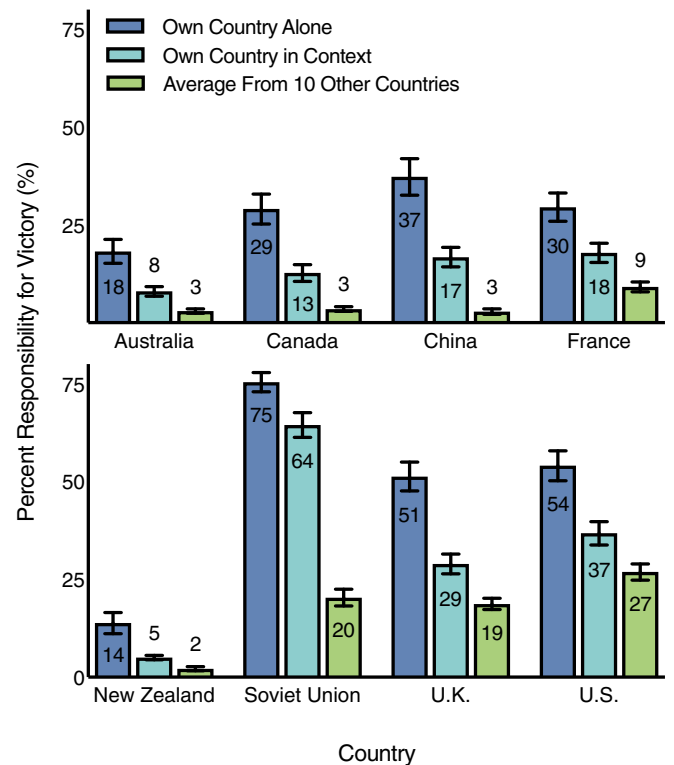
The resulting mean accuracies for items that concerned the European vs. the Pacific theaters of the war are depicted in the light blue and green bars in Fig. 1, respectively. One-way ANOVAs conducted separately on both sets of test questions showed significant differences among the 11 countries, but effect sizes indicate that these were larger for items concerning the European theater of the war,  $F(10, 1,327) = 82.10$ ,  $MSE = 0.01$ ,  $p < 0.001$ ,  $\eta^2 = 0.38$ , than for items concerning the Pacific theater,  $F(10, 1,327) = 4.79$ ,  $MSE = 0.02$ ,  $p < 0.001$ ,  $\eta^2 = 0.04$ . Descriptively, most countries showed rather similar performance for the 2 sets of test items, but China and Japan performed much better for items concerning the war in the Pacific than the war in Europe. Bonferroni-corrected post hoc tests confirmed that both countries showed significantly reduced performance compared with all other countries for test items concerning the European theater of the war (all  $ps < 0.001$ ). However, performance of Japanese subjects was generally the same as that of the other countries for the items concerning the Pacific theater (all  $ps \geq 0.688$ ) except for Russia, which provided higher performance ( $p = 0.008$ ). A similar pattern emerged for Chinese participants, even though their performance was reduced not only relative to Russia ( $p < 0.001$ ), but also relative to France ( $p = 0.022$ ) and Italy ( $p = 0.045$ ; all other  $ps = 1.00$ ). Thus, at least for items relating to the Pacific theater of the war, performance of Japanese and Chinese participants was generally similar to that of participants from the other countries.

These data indicate that, across countries, subjects generally knew some basic information about the war. That is, the following data regarding subjects' perceptions of contributions of their own and other countries' contributions to the victory or the

war effort were unlikely to be borne out of ignorance of key general facts.

**Percentage of Contribution to the War.** The primary interest in the current study was in answers to the question, "In terms of percentage, what do you think was [your country's] contribution to the victory in World War 2?". The mean percentages assigned are represented in the dark blue bars in Fig. 2. People from 3 Allied countries assigned more than 50% of the victory to their own country's efforts: Russia (75%), the United Kingdom (51%), and the United States (54%). The total percentage of effort estimated from the 8 Allied countries was 309% (well over the 100% mark, even though many Allied countries were not included in our survey). Because the distribution of responses differs somewhat across countries, we confirmed our results with median responses. The total of median responses across the 8 Allies was 296%. Box-and-whisker plots of the data can be found in Fig. 3 (see *SI Appendix*, Figs. S1–S3 for additional plots of frequency distributions).

Next in the survey we asked the question differently, requesting that subjects provide estimates for the 8 Allied countries (including the subject's own country), along with a ninth listing of "other countries." The 9 estimates had to total 100%. The results of this second assessment are shown in the light blue bars in Fig. 2, and they are easy to describe. When faced with the partial list of Allied countries, people in 4 Allied countries cut the percentage of their country's contribution by about half or more (Australia, Canada, China, and New Zealand). The 4 others are people from Russia (going from 75% to 64%), the



**Fig. 2.** Allied contribution to the war effort. Perceived percentage of contribution to the war effort is depicted for 8 former Allied countries. Ratings of each country's contribution to victory were provided 1) by participants concerning their own country's contribution, 2) by participants concerning their own country's contribution when asked in the context of 7 other Allied contributions, and 3) when participants in 10 other former Allied and Axis countries rated each country's contribution. Error bars represent 95% confidence intervals.

United States (from 54% to 37%), the United Kingdom (from 51% to 29%), and France (from 30% to 18%), although the latter countries were closer to cutting by half. Obviously, Russians believe that the former Soviet Union was responsible for the victory in WWII, with participants from the United States and the United Kingdom tending to believe the same about their countries but to a lesser degree. Even with this more conservative framing of the question, the total percentage across the 8 Allied countries remained quite high at 191%, if one adds the percentages people of each country gave their own country. That is, even though people were required to make their scores sum to 100%, if one examines the scores people in a given country gave to their own country, the sum is 191%. Again, many Allied countries were not even included in our survey.

The results just reported clearly show that when the question of national responsibility for the victory was reframed by making more salient possible contributions of other countries, the mean estimate of contribution drops. We next assessed the average drop from reframing the question. Across the 8 Allied countries, for the first question in which they were asked to consider only their own country's contribution, participants provided a mean percentage estimate for their own country's contribution of 39.95% (SD = 27.62). When asked to provide the same estimate again in the context of a list of several Allied countries, however, the mean percentage estimate dropped to 25.15% (SD = 23.14), about a 15% difference.

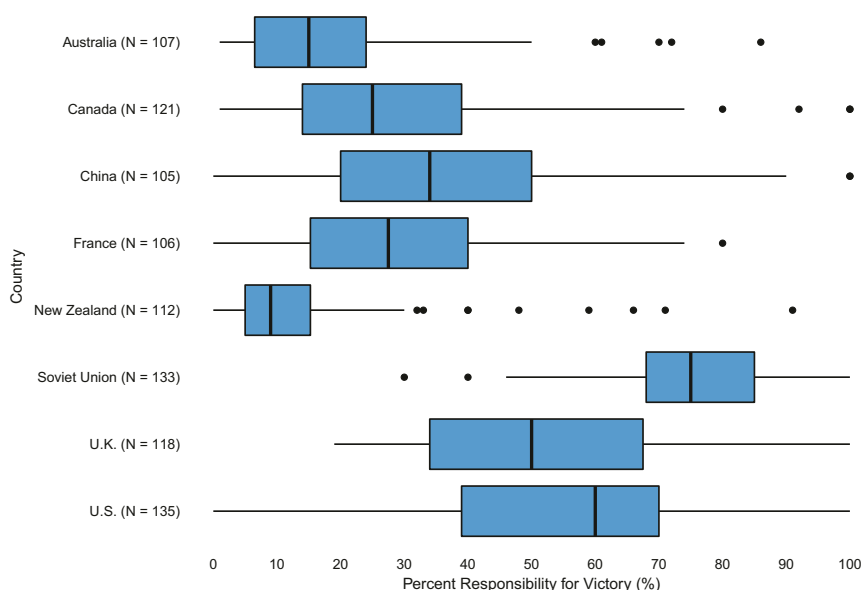
A repeated-measures ANOVA confirmed that repeating the question in the context of other Allied countries had a large effect on percentage estimates for one's own country,  $F(1, 929) = 768.95$ ,  $MSE = 131.63$ ,  $p < 0.001$ ,  $\eta^2 = 0.45$ . However, there was also a significant interaction effect with the between-subjects factor of country,  $F(7, 929) = 11.05$ ,  $MSE = 131.63$ ,  $p < 0.001$ ,  $\eta^2 = 0.08$ , indicating that subject groups differed in how much their percentage estimate changed when the question was posed in a different manner. Follow-up  $t$  tests showed that a significant drop in percentage estimates was evident for each of the 8 countries when participants had to provide estimates for all other countries, too, and not just for their own country, all  $t$ s  $\geq 6.99$ , all  $p$ s  $< 0.001$ . Further Bonferroni-corrected post hoc tests, however, revealed that Russian participants showed a smaller

proportional drop than participants from any of the other countries, all  $p$ s  $< 0.008$ .

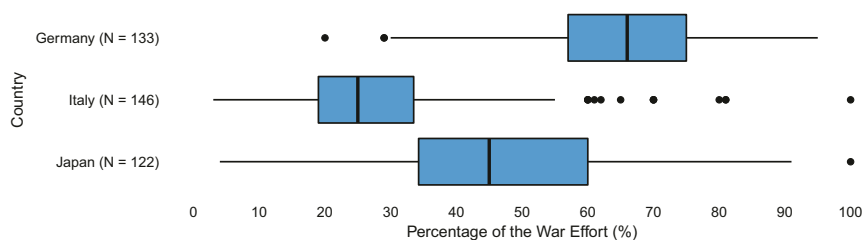
The third (green) bar for each country in Fig. 2 represents the percentage of credit for victory given to that country by people of the other 10 countries. For example, for the United Kingdom, the percentage (19%) is the mean of estimates provided by participants from the 10 other Allied and Axis countries, but omitting ratings from people in the United Kingdom. These values are generally much smaller than either of the percentages the people assign to their own countries. The total now comes to 87%, with an average of 4% attributed to the other countries. (The remaining 9% comes from each country's exclusion from its own percentage). Interestingly, participants assigned the United States a greater percentage of the victory in WWII (27%) than they did to the Soviet Union (20%), a significant effect,  $t(2,406) = 12.47$ ,  $p < 0.001$ , Cohen's  $d = 0.51$ . The perception of people in other countries tends to match that of people in the United States in assigning somewhat greater responsibility for victory in WWII to the United States. In considering this finding, it should be borne in mind that the survey was given in English and listed the US university of its origin on the page for informed consent. These factors may have affected how participants responded. Study 2 dealt with this issue.

For participants in former Axis countries, we asked for the percentage of the war effort provided by the subject's country. Germans claimed 64% of the effort in the losing cause; Japanese assigned themselves 47% of the effort; and Italians said they were responsible for 29%. Thus, even in a losing cause and with just 3 countries making estimates, the Axis powers together claimed 140% of the effort (the medians summed to 136%; see Fig. 4 for box-and-whisker plots and see *SI Appendix, Fig. S2* for frequency distributions). We did not ask the follow-up questions framing the portion of responsibility differently, as we did for the Allies. Rather, after this question on reporting percentage of effort for their country, people in the former Axis countries were asked to rate Allied contributions, and their data were included with those discussed previously.

In sum, our data show strong collective (national) narcissism in claiming responsibility for the war effort in World War II, both for 8 Allied countries and for the 3 Axis powers. When asked to



**Fig. 3.** Box-and-whisker plots of Allied responsibility for victory. Perceived percentage of contribution to victory is depicted for 8 former Allied countries. Boxes depict the first quartile, median, and third quartile. Whiskers depict the farthest value beyond the first and third quartiles that falls within 1.5 times the interquartile range. Points depict values beyond 1.5 times the interquartile range [see R package ggplot2, geom\_boxplot (34) for more information].



**Fig. 4.** Box-and-whisker plots of Axis contribution to the war effort. Perceived percentage of contribution to the war effort is depicted for 3 former Axis countries. Boxes depict the first quartile, median, and third quartile. Whiskers depict the farthest value beyond the first and third quartiles that falls within 1.5 times the interquartile range. Points depict values beyond 1.5 times the interquartile range [see R package ggplot2, geom\_boxplot (34) for more information].

explicitly consider other countries' contributions, citizens of most countries strongly moderated their estimates. However, Russians (representing the former Soviet Union) reduced their estimate of responsibility for the victory only from 75% to 61%. Yet, when people of 10 countries estimated the contributions of the United States and the Soviet Union to the victory, they credited the United States more strongly.

### Results: Study 2

Study 1 was conducted online and in English (24). Arguably, both the use of online testing (from an American university) and the use of English may have influenced subjects' percentage estimates. In study 2, our goal was to collect new data using a shortened pen-and-paper version of the survey and presenting the percentage questions in subjects' native languages. Five of the 8 former Allied countries surveyed in study 1 shared English as their official language, but all 3 former Axis countries had different native languages. Therefore, in study 2, we focused on the 3 Axis countries and examined whether the results observed in study 1 could be replicated when subjects from these countries were asked to respond to the same questions on percentage estimates in their native languages.

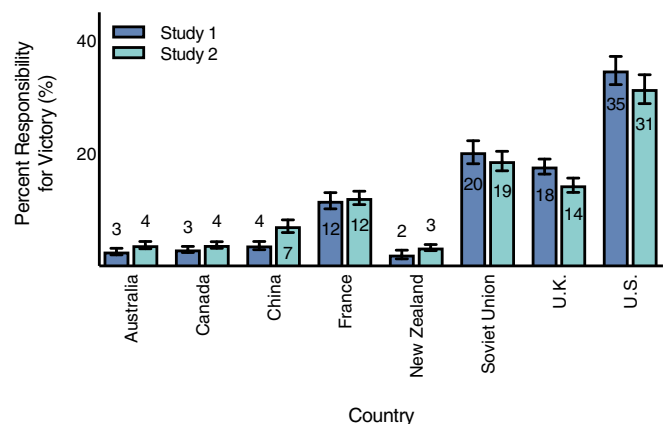
In study 1, for the Axis countries, we asked for the percentage of contribution to the war effort provided by the subject's country in English. Here, we compare those estimates to the estimates subjects provided when responding to the survey in the native language of the country. Frequency distributions of the data are provided in *SI Appendix, Fig. S4*. In study 1, the Axis countries' mean estimates summed to 140% when participants were asked in English, and in study 2, when asked in their native languages, they provided a total sum of 137%. To confirm, we again examined median instead of mean sums: In study 1, the medians summed to 136%; in study 2, the median sum score was 140%.

For Germany, there was no difference in the percentage estimate of contribution to the war effort whether the subjects responded to the question in English ( $M = 64.44\%$ ) or in German ( $M = 64.60\%$ ,  $t(272) < 1$ ). For Italy, subjects accepted more responsibility when asked in Italian ( $M = 34.29\%$ ) than when asked in English ( $M = 28.69\%$ ,  $t(289) = 2.95$ , standard error of difference [SED] = 1.90,  $d = 0.35$ ,  $p = 0.003$ ). In contrast, Japanese subjects accepted more responsibility when asked in English ( $M = 47.13\%$ ) than when asked in Japanese ( $M = 37.77\%$ ,  $t(211) = 3.53$ , SED = 2.65,  $d = 0.49$ ,  $p = 0.001$ ). Importantly, despite these differences, the overall sum score remained stable from study 1 to study 2. In addition, especially for Italy, the age of subjects differed between samples of the 2 studies, as well as the language of the survey.

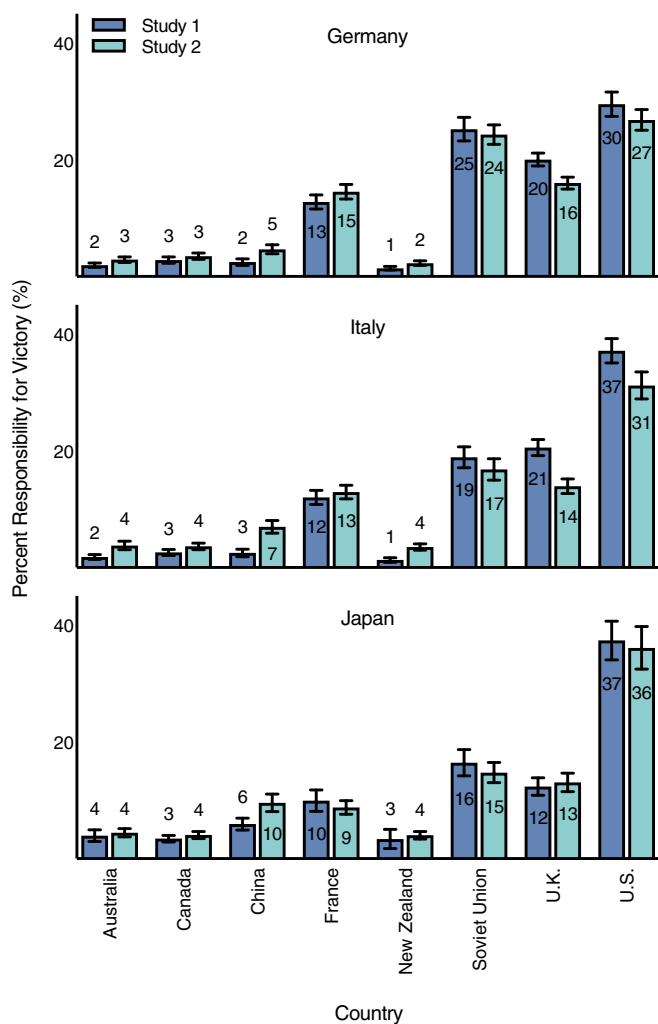
As in study 1, people in the former Axis countries were asked to rate Allied contributions next. Overall, as seen in Fig. 5, the general pattern in the data for Allied countries' responsibility is remarkably similar for study 1 and study 2. Indeed, the average deviation between respondents in English in study 1 and

respondents in a native language in study 2 is less than 2% (1.88%, ranging from 0.8% to 3.9%).

Figs. 5 and 6 show differences between study 1 and study 2 for the 3 surveyed countries. An  $8 \times 3 \times 2$  repeated-measures ANOVA on the data in Fig. 6 revealed a significant 3-way interaction,  $F(14, 5,404) = 2.85$ , MSE = 154.67,  $\eta^2 = 0.01$ ,  $p < 0.001$ . Percentage estimates for the single Allied countries varied slightly, but not consistently for the 3 surveyed countries across study 1 and study 2. We conducted follow-up  $t$  tests and provide a summary of all significant contrasts between study 1 and study 2 in *SI Appendix, Table S5*. Mostly, they reflect slightly higher percentage estimates in study 2 for countries that received rather low estimates in study 1, but 3 countries received smaller numbers than in study 1. Despite these differences, however, the general pattern of percentage estimates was quite similar for the online survey conducted in English and the pen-and-paper version of the survey provided in the subjects' native languages, as shown in Fig. 5 when aggregated across countries. The results of study 2 therefore indicate that the general pattern observed in study 1 can be replicated and that neither online testing from a US university nor the use of English seems to have biased our results. Future research is needed to conclude that the same holds true for China, France, and Russia. In addition, the results of study 2 show that age is probably not a determining factor. Students were roughly the same age in the 3 samples of study 2 (German students were slightly older), but they were all younger than in the samples of study 1 (*SI Appendix, Table S3*).



**Fig. 5.** Average Axis ratings of Allied contributions to the war effort. Shown is percentage of responsibility for victory across 8 former Allied countries as perceived by participants in former Axis countries. Average Axis ratings are shown side by side for study 1 and study 2. Error bars represent 95% confidence intervals.



**Fig. 6.** Axis ratings of Allied contributions to the war effort for each Axis country. Shown is percentage of responsibility for victory across 8 former Allied countries as perceived by participants in Germany, Italy, and Japan, respectively. Axis ratings are shown side by side for study 1 and study 2. Error bars represent 95% confidence intervals.

**Discussion**

Our study compares collective memories of people of different nations that participated in World War II regarding the events and interpretations of the war. Probably no one in our samples remembered the war in Tulving’s sense of recollecting activities they experienced at a particular time and place during the war (7). Rather, these memories are derived from textbooks, grandparents, movies, novels, stories, family discussions, and possibly television programs recounting or commemorating various aspects of the war. Nonetheless, we believe we have captured important aspects of how the war is remembered by people in the 11 countries surveyed.

On the general knowledge test in study 1, participants from Russia (listed as the Soviet Union) performed best and Japanese citizens performed the worst (in part due to a relative lack of knowledge of events in Europe; Fig. 1), with other countries intermediate. Overall, knowledge of WWII was reasonably accurate, although the test did not probe for detailed knowledge. Clearly, though, Russians knew more than participants from the other countries. The Great Patriotic War, as WWII is called in Russia, remains a major source of national pride and is taught

quite extensively in schools, as is reflected in our results. The same outcome occurred on another test reported in ref. 25.

Depending on the criteria one uses to count “Allies,” many other countries fought on the Allied side besides the 8 we included. For example, according to the National World War II Museum website in the United States, 12 other Allied countries suffered at least 1,000 military deaths in the war. If these countries had all been surveyed, the total percentage would no doubt be much greater. As John F. Kennedy commented in taking responsibility for the Bay of Pigs fiasco, “victory has 100 fathers, defeat is an orphan.” The Allied nations showed this phenomenon in victory, with only 8 of at least 20 possible Allies claiming 309% responsibility for the victory.

The results show what has been termed “the ethnocentric bias of group self-centeredness” (26), collective narcissism (27), or national narcissism (8); people in groups often see themselves and their group in a positive light and minimize or derogate outgroups (4, 28, 29). Many studies of small groups have demonstrated overclaiming of responsibility in married couples, in team sports, and in other groups (12). We extend this finding to large groups, as have others (8, 9).

Even in defeat, the Axis countries claimed great responsibility for the “war effort,” with Germany, Japan, and Italy claiming 140% in study 1 and 137% in study 2. This outcome may seem surprising, but we framed the question in a positive light in terms of war effort. If we had framed the question as being “responsible for the loss,” the results might have reflected Kennedy’s aphorism discussed earlier, with Axis countries reporting less than 100% effort.

Of course, there can be no fully accurate, objective estimate as to percentage of responsibility of national efforts in WWII, but a proxy measure that can inform the discussion is the number of military casualties. Table 1 provides estimates of military deaths of soldiers for all 11 countries, and it is obvious that far more Soviet soldiers died than those from any other country. However, people in the other 10 countries seemed to minimize Soviet contributions relative to American contributions, as shown in our analyses above where (excluding Russian and American ratings of their own nation’s contributions) we found that people of the other 10 countries rated the US contribution (27%) as higher than the Soviet contribution (20%). We suspect that representations in popular culture (e.g., due to American movies, TV shows, novels, and the like) provide much less emphasis on the Eastern front in Europe than on the Western front and the war in the Pacific. Of course, attributions of responsibility may depend on many factors. The US Lend-Lease Act supplied the Soviet Union, the United Kingdom, and other countries with massive amounts of supplies for the war. Still, most Americans would probably be surprised that the Soviet Union had 2.4 times the number of soldiers killed in a single battle (the Battle of Stalingrad; ~1,100,000) than the United States did in the entire war (416,800). Further, most historians (e.g., ref. 18) argue that the Battle of Stalingrad (spanning 1942 to 1943) was the key turning point in the war, the first time Hitler’s forces were defeated in a decisive manner with huge losses (about 800,000 Axis troops died). The Battle of Kursk (or Kursk Salient) was another critical battle (the largest tank battle in history) that few people outside the former Soviet Union seem to know, and it was another decisive defeat for Hitler in 1943. Given these facts and others, the Russian view that the Soviet Union played a decisively critical role in the Allied victory, especially in Europe, is understandable. When asked to list the most important events of World War II, few respondents from countries other than Russia listed the Battle of Stalingrad, much less the Battle of Kursk (25). Of course, the US contribution in the Pacific theater of the war was great.

We have referred to the overestimation of the contribution of one’s nation to the war effort as “national narcissism.” Narcissism

**Table 1. WWII military deaths**

Names of countries	Estimated nos. of military deaths
Former Allied countries	
Australia	39,800
Canada	45,400
China	3,500,000
France	217,600
New Zealand	11,900
Soviet Union	9,750,000
UK	383,600
US	416,800
Former Axis countries	
Germany	5,533,000
Italy	301,400
Japan	2,120,000

For countries in which a range of military deaths is given (China, the Soviet Union), the midpoint of the range is used for the number of deaths. The data are from the World War II Museum website: <https://www.nationalww2museum.org/students-teachers/student-resources/research-starters/research-starters-worldwide-deaths-world-war>.

is a term used to describe a personality disorder in individual psychology, and attributing labels used for individuals to groups can be a fraught enterprise (such as when a society is said to “repress” a topic when what is meant is that the topic is not widely discussed in that society). Nonetheless, we feel the term is warranted. Narcissism carries both the positive aspects of glorifying one’s self or one’s group and also the dark overtones of one’s group or nation imposing its values and traditions on others, often through conquest and force. Certainly, that was the case for both Germany and Japan in World War II, and it is a common theme in history. As noted in the Introduction, Zaromb et al. (8) similarly reported findings interpreted as revealing national narcissism when they asked people to estimate the percentage of all of world history for which people of their country were responsible. The estimates were quite high, even for small countries. As in the estimates of responsibility of World War II, we see great overclaiming of responsibility. The highest claim of responsibility was from Russians (61%) and the lowest from the Swiss (11%), among the countries sampled. Not all of the countries in our study were represented in the Zaromb et al. (8) research, but besides Russia, the United Kingdom claimed 55% of responsibility for all of world history, followed by China (49%), Canada (40%), Japan (35%), the United States (30%), Australia (26%), and New Zealand (18%). So, even without data from France, Italy, and Germany, people in just 8 countries from the set of 11 in our current study claimed to account for 314% of world history. Note that again estimates from Russia, the United Kingdom, and China are particularly high.

What accounts for national narcissism? It is impossible to answer this question with the few studies at hand, but as noted in the Introduction, several factors are probably involved. One likely cause is the availability heuristic (11). Because people of each nation learn much more about their own country’s history and perspective, they likely overemphasize it in any judgment of responsibility of common enterprise among countries. That is, they may treat the question as an asking about their country’s fraction of world history, with “contributions I know about my country” in the numerator and “contributions of all the rest of the countries” in the denominator. The numerator is a relatively large number, due to their education and exposure to media, family discussion, and other factors. On the other hand, the denominator—the entire history of the war—is vast and its magnitude is greatly underestimated. Hence, the resulting percentage they report is far too large. As noted in the Introduction, this same factor of selective remembrance may be at work in the

results of couples and people in other small groups (12); in weighting our own contributions to performing some task such as emptying the dishwasher, individuals can remember their own instances of the activity and may be less aware of the occasions in which the other person performed the task.

Another possible reason for such ethnocentrism has been termed the illusory superiority effect, the tendency for individuals to believe that they are above average on many dimensions (30); it is possible the same tendencies carry over to groups, such that groups of which a person is a member are judged superior to outgroups. Indeed, it has been shown the members of ingroups tend to believe they are superior to members of outgroups (13). These considerations tie in with “my-side bias,” the egocentric tendency that leads people to favor their own group to that of other groups when making judgments (14). These hypotheses are not the only ones and of course are not mutually exclusive. Future research is needed to understand the causes of national narcissism. Wertsch (1) has argued that understanding national narratives, the story of a country’s history that is often simplified and glorified, may be 1 key to understanding national narcissism.

In sum, we report striking differences in collective memories of WWII across 11 nations, with people in every country judging their own responsibility for the war effort as being larger than its contribution as judged by people of other countries. Such national differences in perspective need to be fully understood so that national differences in viewing current events may be appreciated. Often today’s differences are rooted in how events of the past are remembered (31, 32). Unless we can understand the national narrative (or narratives) of a people, we cannot understand their current actions and perceptions (33).

### Materials and Methods: Study 1

**Participants.** Our aim was to collect data from at least 100 subjects in each country. The link to the online survey was distributed in 11 countries, mostly by international contacts of the authors. Subjects volunteered and were not compensated for participating. The study protocol received full approval from Washington University’s Institutional Review Board, and the first page of the document required subjects to provide their informed consent to participate. Before analyzing the data, we eliminated incomplete surveys and the data of participants who reported different citizenships than the one targeted in a specific country, who indicated that they had looked things up on the internet, or who reported that they were less than 18 y old. This left us with an overall sample of 1,338 participants. Over 100 people from each of 11 countries participated, but sample sizes differed somewhat across countries (from a low of 105 to a high of 146). *SI Appendix, Tables S1 and S2* show sample sizes, mean age, distributions of gender, and highest achieved educational level for participants from former Allied and former Axis countries, respectively. Age and gender balance of participants differ somewhat across the countries. Study 2 helped to correct for the differences in age. The gender differences are difficult to analyze for each country, because often the samples of men are too small to provide meaningful estimates of central tendency. We discuss this issue in conjunction with study 2 where the same problem exists.

**Materials and Procedure.** To conduct the study, we created an extensive online survey via Qualtrics, consisting of several parts (e.g., one for probing general knowledge about the war and another for asking about each country’s contribution to the war). A full copy of all survey contents can be found on the Open Science Framework (OSF) (<https://osf.io/vjwbw3/>); results from other survey parts are reported in ref. 25.

In one part of the survey, participants were asked to complete a general knowledge test on WWII. This test consisted of 15 multiple-choice questions. For example, one question was, “Who was the leader of Germany during World War 2?”. For each question, the correct answer (in this case, Hitler) was presented alongside 3 incorrect lures (e.g., Franco, Bismarck, Himmler), and subjects were asked to select the correct answer (for a complete list of test items, see *SI Appendix, Table S4*). The sequence of questions was randomized anew for each participant, and the position of the correct answer and other (lure) options was random, as well. The general knowledge test was designed to assess knowledge of the war among subjects in the 11

countries. Proper names (e.g., Auschwitz, Churchill) were provided in Chinese characters for the Chinese subjects.

In a further part of the survey, participants were asked to estimate their own country's contribution to the war. The procedure differed slightly for participants from former Allied and Axis countries. Participants from former Allied countries were asked to indicate what percentage their own country had contributed to the victory of WWII. This question was asked in 2 ways. First, subjects were asked the question, "In terms of percentage, what do you think was [your country's] contribution to the victory of World War 2? In other words, how responsible was [your country] for the victory of the war?". They saw a line marked with a 0 on the left and a 100 on the right (with every 10 intermediate values marked), and they were asked to drag a slider from its starting point (at 0) to indicate their desired answer. Next in the survey, however, subjects were asked the question a different way: "In terms of percentage, how much do you think each of the following countries contributed to the Allied victory of World War 2? In other words, how responsible was each country for the Allied victory of World War 2?" with the names of 8 Allied countries (including the subject's own country) listed in alphabetical order and with a ninth listing of other countries. Subjects were asked to enter a percentage in each blank, and the program provided a running total. They could not continue the survey until the total percentage added up to 100%, and they were free to change their initial percentage in this second version of the question (most people did). We were interested in whether people would moderate their claim of their own country's responsibility when other Allied countries were explicitly mentioned and when the total percentage had to sum to 100%.

We collected similar data for the former Axis countries about their efforts in the war, using the same 100-point scale as for participants from former Allied countries. The question put to their citizens was, "Germany, Italy, and Japan fought on the same side for 6 years during World War 2. What percentage of the war effort was provided by [your country]?". After responding to this question, participants from former Axis countries were also presented with the same list of all surveyed Allied countries and were asked to estimate each Allied country's contribution to the victory of the war.

We used a constant order for the tasks listed above; that is, we did not counterbalance the order across subjects. The reason for the ordering is that we first wanted subjects to list events, answer general knowledge questions, and take the event recognition test to remind them of the breadth of World War II before they answered the percentage responsibility questions about the war. This ordering may moderate their percentage responsibility responses about their country's contribution to the war, because they had just been reminded of the war's extent in the European and Pacific theaters of the war. However, results reported in ref. 9 show that such recent exposure may not moderate percentage responsibility judgments. Likewise, we always asked about the percentage responsibility of the respondents' own countries before asking the question in which they were asked to respond when considering other countries. The reason was to first gain a measure of the absolute judgment of individuals about their own country's contribution before trying to moderate it by forcing them to explicitly consider the contributions of other countries and make a relative judgment concerning their own country. In this way, we could determine the amount subjects moderated their percentages in response to the second question, as we report in *Results: Study 1*.

## Materials and Methods: Study 2

**Participants.** Again, our intention was to collect data from roughly 100 subjects in each country. Subjects were students who volunteered and were offered partial course credit for participating. They were recruited at

universities in Germany, Italy, and Japan by M.A., B.F., and M.T., respectively. The studies were conducted in accordance with standard procedures in each of their countries and universities: For M.A., the study was carried out in accordance with the recommendations of the German Psychological Society (DGPS), and all subjects provided written informed consent in accordance with the Declaration of Helsinki Ethical Standards for research on human subjects; for B.F. the "G. d'Annunzio" University of Chieti Department of the Department of Psychological Sciences Ethics Committee approved the study, and all subjects provided written informed consent in accordance with the Declaration of Helsinki Ethical Standards; and for M.T., the Departmental Ethics Committee at the University of the Sacred Heart approved the study, and all participants gave written informed consent before inclusion in the study in accordance with the Declaration of Helsinki Ethical Standards. All subjects provided informed consent on the first page of the survey before filling out the questionnaires. Datasets of single participants had to be eliminated if the total sum score for the second percentage contribution question (which, this time, had to be calculated by the subjects) deviated from 100%. After such exclusions, an overall sample of 377 newly recruited participants was included. Sample sizes differed across countries (from a low of 91 to a high of 145). *SI Appendix, Table S3* shows sample sizes, mean age, and distributions of gender in each country. Although age is roughly equated (German students were somewhat older), the gender difference in study 1 is even more pronounced in study 2. We combined data across the 2 studies to examine possible differences. Collapsing across studies and countries, the 1,135 women provided percentage responsibility ratings for their countries of 44.0% whereas the 671 men gave rates of 40.1%. The difference is relatively small but significant,  $t(1,704) = 2.25$ ,  $SED = 1.29$ ,  $d = 0.11$ ,  $p = 0.025$ .

**Materials.** In study 2, the survey was essentially a shortened version of that used in study 1, with only some parts included. Most importantly for the present study, subjects were asked to respond to the same questions regarding percentage contribution to the war effort; the general knowledge test was not included. The survey questions were presented to the participants in the native language of their country (Italian, German, and Japanese) rather than in English. The survey was administered via pencil and paper rather than through an online survey.

**Procedure.** All participants were from former Axis countries and were therefore asked to indicate what percentage of the overall war effort their own country had contributed to the Axis side of the war. In this pen-and-paper version of the task, subjects were asked to write a percentage value (from 0% to 100%) in a blank space below the question. Next, as in the online survey, the same list of all surveyed Allied countries (plus the additional item, other countries) was presented and subjects were asked to estimate each Allied country's contribution to the victory of the war. Again, the wording was the same as in the online survey, but subjects were asked to place their percentage estimates in blank spaces next to the country names (such that all percentage estimates would add up to a 100% sum score).

## Data and Materials Availability

Further data and analyses of this project can be found in *SI Appendix*; the data from this project are archived in the Center for Open Science repository: <https://osf.io/vjwbw3/>.

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