Collective Remembrance and Private Choice: German-Greek Conflict and Behavior in Times of Crisis

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Abstract

When does collective memory impact behavior? We highlight two conditions under which the memory of past events comes to matter for the present: the associative nature of memory, and institutionalized acts of commemoration by the state. During World War II, German troops occupying Greece perpetrated numerous massacres. Memories of those events resurfaced during the 2009 Greek debt crisis, leading to a drop in German car sales in Greece, especially in areas affected by German reprisals. Differential economic performance did not drive this divergence. Multiple pieces of evidence suggest that current events reactivated past memories, creating a backlash against Germany. This backlash also manifested in political behavior, with vote shares of anti-German parties increasing in reprisal areas after the start of the debt crisis. Using quasi-random variation in public recognition of victim status, we show that institutionalized collective memory amplifies the effects of political conflict on economic and political behavior.


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Collective memory is a central component of group identity. The importance of distant events is typically passed from generation to generation through acts of public remembrance and the teaching of history, using symbolic “sites of memory”\(^1\). Collective memory functions as “mythical glue” (Harari, 2014), helping humans to collaborate in large groups of genetically unrelated individuals by becoming members of “imagined communities” (Anderson, 1983).

While collective memory is a constant of human society, it is still unclear when it meaningfully affects important dimensions of behavior. Under which conditions does collective memory of past events come to matter for present-day behavior and attitudes? Despite a burgeoning literature on political legacies and long-term historical persistence (Simpser, Slater, and Wittenberg, 2018; Voth, 2020), recent work increasingly suggests that the past only affects the present under specific circumstances (Ochsner and Roesel, 2017; Rozenas and Zhukov, 2019; Cantoni, Hagemeister, and Westcott, 2020). What moderates the contingent effect of history on present-day behaviors and attitudes?

In this paper, we highlight the role of two factors, one behavioral and one institutional. The first one is associativity of memory. When present events resemble the past, the salience of history increases in people’s minds, affecting their beliefs and associated actions. The second factor is the degree to which collective memory is institutionalized. Official commemoration of past events through symbolic state actions increases the likelihood that collective memory influences present-day behavior. We provide evidence for the interaction of the two factors: associativity drives the time-variant effect of past events on present-day behavior, and that effect is increasing in the degree of institutionalization of collective memory.

\(^1\)“lieux de mémoire”, in the parlance of French historian Pierre Nora (1989).
Our empirical analysis focuses on economic and political behavior in the context of Greece. During Greece’s military occupation by Germany in World War II, German armed forces committed numerous war crimes, including mass executions and the complete destruction of entire villages. This violence was typically carried out in retaliation for local partisan attacks (Mazower, 1995). Decades later, during the sovereign debt crisis of 2009–2014, political relations between the German and Greek government once again turned acrimonious. Under EU and German pressure, Greece had to implement stringent austerity measures. German newspapers were quick to blame “lazy Southerners” for the Euro debt crisis. As public discord erupted between the German and Greek governments, memories of Germany’s violent occupation of Greece during World War II resurfaced: Greek demonstrators waved placards of German chancellor Angela Merkel in Nazi uniform, and consumer groups called for a boycott of German products.

To examine how collective memory interacted with contemporary political conflict to influence major individual decisions, we focus on car sales. Cars are “big ticket items”, representing a major expense for consumers. They are also an iconic German product. We analyze variation in car sales over time and across prefectures in Greece and ask: Did German car sales during the debt crisis decline more in areas that suffered German reprisals during World War II – and especially in those that received official recognition as “martyred” towns?

Using original sources and secondary historiography, we construct a dataset of the universe of Greek towns that experienced German reprisals during World War II. We combine that with data on new car registrations. Applying a machine learning algorithm on the online archive of Greece’s largest newspaper, we compile a time-varying measure of political conflict between Greece and Germany. In addition, we conduct a survey in a sample of over 900 households in towns that experienced reprisals, and a set of control locations.

Figure 1 previews our main result. The dotted line tracks the level of animos-
ity between Germany and Greece based on our newspaper-based measure. As the
debt crisis worsened, conflict surged, with months of peak conflict in early 2010
and the summer of 2012. The solid line shows the difference in German market
share between prefectures with and without reprisals. From the two time series, it
is evident that heightened public conflict between Germany and Greece coincided
with lower German market shares in high- relative to low-suffering prefectures.
Panel regressions confirm the pattern: the greater the share of reprisal towns in a
prefecture, the greater the decline in market share for German producers in times
of German-Greek conflict. We provide numerous pieces of evidence that these re-
sults are not due either to the differential time-varying impact of the crisis, or the
persistent effect of cultural characteristics of locations.

Figure 1: German-Greek conflict and German market share in prefectures with and
without reprisals

Notes: The solid line is the difference in the seasonally adjusted (expressed as difference of month
$t$ from month $t-12$) share of German car registrations in reprisal vs non-reprisal prefectures. The
dotted line is the monthly share of news articles related to German–Greek conflict. Both series are
normalized by their standard deviation.

We next explore in more depth how the past comes to matter for the present.
Since the 1990s, Greece awards communities “martyr” town status if they suffered
severely during the occupation – a purely honorific designation with no material
benefits. Applications of towns for martyr status are assessed by a committee com-
posed of academic historians. Government data on town-level destruction combined with information from the committee minutes allow us to identify an exogenous component in the assignment of martyr status. Higher wartime destruction in general led to higher acceptance rates, but with a pronounced discontinuity at around 50% of destruction. This suggests that the committee followed a behavioral heuristic for deciding status assignment. Controlling for average levels of destruction, prefectures with a higher share of towns that received official martyr status saw market share declines for German cars above and beyond those experienced by prefectures with a higher incidence of reprisals. We find a similar result after isolating the exogenous component of martyr status, as predicted by the discontinuity at 50% of wartime destruction.

This finding indicates that public recognition of victim status can amplify collective memory. To examine the mechanisms behind the effects of state sanction we conduct a telephone survey of mayors’ offices in towns affected by reprisals. We show that places that continue to collectively commemorate their suffering during 1941-44 to the present day saw sharp declines in German car sales in periods of heightened disagreements between the German and Greek governments. These effects are similar in magnitude as for martyr towns, suggesting that formal recognition of past victimhood works in large part through memorialization and the visibility of past memory in public life. Qualitative evidence from martyr towns confirms this interpretation, by revealing a stronger role of the memory of past atrocities in public events and in public education. We find no strong evidence of interaction between state recognition and family transmission of past trauma: martyr status has similar effects on residents native to a town and on more recent arrivals.

Finally, we examine the implications of associativity and institutionalization of collective memory for political behavior. Applying a dictionary approach to the universe of Greek parliamentary speeches since 2008 we identify parties with a
critical stance against Germany. We show that the vote share of those parties is identical across locations prior to the start of the debt crisis, but steeply increases thereafter in municipalities that experienced reprisals. Consistent with patterns of economic behavior, this divergence across municipalities is driven by martyr status. These results provide new evidence that economic and political behavior respond to reactivation of collective memory in similar ways.

Our study makes several contributions. Work on historical legacies has identified countless ways in which past events affect present-day attitudes and behaviors, both through institutional and through social channels (Putnam and Leonardi, 1993; Voigtländer and Voth, 2012; Guiso, Sapienza, and Zingales, 2016; Acharya, Blackwell, and Sen, 2016). Our paper adds to this literature by demonstrating that history’s effect on the present is not a linear function of time. Persistence can be time-varying, and the effects of the past may remain latent, until reactivated by changes in the external environment. We thus contribute to a small number of studies that demonstrate the contingent effects of the past on present-day behavior and have emphasized the role of political leaders (Charnysh, 2015; Ochsner and Roesel, 2017) and of the political context (Rozenas and Zhukov, 2019). To these factors we add a behavioral mechanism: the association of present events to significant historical experiences, which increases the salience of the past and makes memory a crucial determinant of behavior.

We also contribute to a narrower subset of the literature on persistence, that focuses on the effects of past conflict and repression. Several studies have demonstrated that past violence has persistent influence on behavior, and that this influence is transmitted across generations (Balcells, 2012; Lupu and Peisakhin, 2017; Rozenas, Schutte, and Zhukov, 2017). We add to this work by showing that negative attitudes towards the perpetrator of the violence may not manifest in behavioral outcomes unless triggered by external conditions. We also show that, beyond political attitudes and voting behavior, past violence can affect other aspects of individual
decision-making such as high-stakes purchasing decisions.

We also provide new evidence on the role of institutionalized collective memory. Through official recognition and rituals of collective remembrance, an adverse shock translates more sharply into attitudes that matter, especially when sanctioned from above. To work that has identified the importance of family (Lupu and Peisakhin, 2017), community (Charnysh and Peisakhin, Forthcoming) and local institutions (Wittenberg, 2006) as vehicles of cultural transmission and identity preservation, we contribute evidence on the role of the state. We show that official state actions aimed at preserving collective memory have strong effects on behavior when the past becomes again relevant for the present, and provide evidence that they work through making memory visible in public life for all residents of a community, regardless of their personal or family connection to past violence. Our work thus also relates to studies that provide evidence on the material effects of symbolic politics (Rozenas and Vlasenko, 2020).

Finally, we add to a literature in international political economy on the effects of consumer boycotts (Ashenfelter, Ciccarella, and Shatz, 2007; Hong et al., 2011; Pandya and Venkatesan, 2016). In work most related to ours, Fisman, Hamao, and Yongxiang (2014) examine a diplomatic incident between China and Japan caused by how Japanese textbooks treated the 1930s invasion of China. Unlike their setup, the effects we estimate are not due to changes in firm behavior or government actions, but due to choices made directly by consumers. Our results suggest that collective memory of past violent actions can be a mechanism sufficiently powerful as to help overcome the collective action problem underlying the failure of many boycott efforts.

**Collective Memory, Associativity, and Behavior**

Past events often cast a long shadow on present-day behavior. A large literature on historical legacies in political science and related disciplines provides ev-
idence for the persistent effects of history on behavior and attitudes in a variety of domains, from preferences for government intervention (Alesina and Fuchs-Schündeln, 2007) to trust (Nunn and Wantchekon, 2011) and attitudes towards out-groups (Voigtländer and Voth, 2012).

But why, and when, does the past persistently affect behavior? In pioneering work, Halbwachs (1992) introduced the notion of collective memory as a link between past and present. Collective memory is the shared, mutually acknowledged history of a social group, that is reinforced through commemoration, and forms part of “the connective structure of societies” (Assmann, 2011). Collective memory is not only influenced by present events (Halbwachs, 1992; Schwartz, 1982), but also structures a society’s understanding of those events and consequently the behavior of its members. Building on an interdisciplinary literature, we propose two factors that determine when collective memory drives behavioral changes in response to changes in external circumstances.

The first one is associativity of memory. At the individual level, similarity of past and present events facilitates recall (Mullainathan, 2002). At the group level, whenever present conditions bear some resemblance to those of a shared past, even if the latter has not been individually experienced by all society members, collective memory will structure present beliefs. Indeed, studies indicate that history’s effects on behavior are contingent on characteristics of the present situation (Rozenas and Zhukov, 2019), and actors like political elites or state-controlled media exploit associativity to manipulate the salience of past events and further political goals.

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2The literature on persistence spans political science and economics and is simply too vast to accurately summarize here. For studies on historical legacies affecting political behavior – as opposed to institutional or economic outcomes – see indicatively Putnam and Leonard (1993); Charnysh (2015); Guiso, Sapienza, and Zingales (2016); Acharya, Blackwell, and Sen (2016); Pop-Eleches and Tucker (2017); Homola, Pereira, and Tavits (2020). Closest to our setup, Balcels (2012), Lupu and Peisakhin (2017) and Rozenas, Schutte, and Zhukov (2017) focus specifically on the persistent effects of past violence.

3See Olick and Robbins (1998) for a review of the sociological literature on collective memory.
We argue that memory can function as a latent variable that is activated under particular conditions, for instance when chance events have elements in common to events in past history. Association then increases the salience of the past making it more likely to influence behavior.\(^4\)

How much similarity is needed for associations to be made across disparate events? Presumably, associativity is increasing in the degree of similarity between situations. At what level of similarity associativity begins operating is ultimately a quantitative empirical question. Existing studies (Ochsner and Roesel, 2017) suggest that similarity in key features of a situation, such as the actors involved and the type of relationship between them (adversarial vs nonantagonistic), can be enough to trigger connections between past and present.

The second factor that determines whether collective memory has real effects is institutionalized commemoration. All societies preserve and reinforce memory using a variety of mechanisms, such as the transmission of knowledge about past events, or enforcement of behavior appropriate to the past, through the family (Lupu and Peisakhin, 2017), community (Charnysh and Peisakhin, Forthcoming) or local institutions (Wittenberg, 2006). Memory preservation can happen through more formal routes, such as through state-sanctioned symbolic politics – for instance parades, or memorials – or through legislative actions (Savelsberg and King, 2007). Studies indicate that such symbolic actions have material implications (Rozenas and Vlasenko, 2020). We hypothesize that the degree to which commemoration is institutionalized matters for memory preservation, and in particular for how memory comes to matter when past events become salient.

There are two possible channels through which institutionalization may work.

\(^4\)Some of the effects of memory’s associative property have also been demonstrated in experimental contexts (Dinas, Fouka, and Schläpfer, 2021).
First, formal sanctioning of memory by the state leads to more intense commemoration activity and a higher visibility of past events in public life or in public education. Second, the act of formal sanctioning itself may have direct effects on the strength of memory; when a location is officially labelled as the victim of atrocities, residents of the location may be more likely to have knowledge of such atrocities, or even believe they bear responsibility to remember them. Either of those two pathways, or their combination, could amplify collective memory’s effects on behavior when the state formally contributes to memory preservation.

In sum, the present study examines not only whether associativity between past and present matters for behavior, but also whether this connection is moderated by the mechanism that preserves and transmits collective memory. In particular, we show empirically that the memory of past violence has a time-varying effect on behavior and attitudes towards the perpetrator of the violence, as the salience of present events increases associations to the past in people’s minds. The magnitude of this effect depends on institutionalization of collective memory: the connection between past and present – though present in all locations that experienced violence – is stronger where memory is preserved through government recognition. In investigating the channels behind this pattern, we find that the visibility of past memory in public life, for instance through the presence of public memorials, is the crucial driver of the effects of state sanctioned collective memory.

**Historical Background**

**Germany’s Wartime Occupation of Greece**

In May 1941, Axis forces occupied Greece. The country was divided into three occupation zones, of which the largest was administered by Italy. Germany occupied less territory but controlled key locations including Athens, Thessaloniki, and Crete. Bulgaria was in charge of a relatively small part of the country close to its
own borders. From the beginning, the civilian population suffered from expropriations and plunder. The German armed forces requisitioned foodstuffs, causing a major famine during the winter of 1941–1942, leading to an estimated 300,000 deaths (Hionidou 2006).

Reprisals against potentially uninvolved civilians in areas of armed resistance were first authorized by the German army in April 1941 in Yugoslavia (Mazower, 1995). The High Command of the German Armed Forces laid down quotas for reprisal killings: 100 civilians were to be shot for each German soldier killed in a partisan attack, 50 for each soldier wounded, and so forth. Such reprisals against civilians became standard practice of German anti-partisan operations in the Balkans and were later extensively used throughout Eastern Europe.

Crete saw the first German reprisals on Greek soil (Nessou 2009). Partisan attacks were often followed by indiscriminate massacres of the civilian population and the destruction of every village near an attack. By 1944, an estimated 2,000-3,000 Greek civilians had been executed by German armed forces on Crete alone (Nessou 2009).

After Italy’s surrender in 1943, German forces occupied the zone held by its former ally. Fighting between guerrilla groups (andartes; mostly the Communist-led ELAS) and the Wehrmacht intensified. For example, during an anti-partisan sweep by the 117th Jäger Division in the mountains near Kalavryta (Peloponnese), Greek resistance fighters executed 78 German prisoners. In retaliation, German troops killed 693 of Kalavryta’s inhabitants, including women and children, on December 13, 1943 (Meyer 2002). Some 28 towns and villages in the area were destroyed. Similarly savage reprisals occurred all over Greece, including in the famous cases of Doxato, Kommeno, and Distomo. After the war, the Greek Ministry

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5General Student, the German commander of Crete, instructed his forces to “leave aside all formalities and deliberately dispense with special courts.” Shortly thereafter, following the death of a German officer in Kondomari, Crete, German troops shot 19 civilians (Meyer 2002).
of Reconstruction estimated that some 30,000 Greeks perished in reprisal attacks by German forces, with numerous villages and towns left destroyed (Doxiadis [1947]).

**Martyr Status**

In 1993, the Greek parliament debated recognition of Kalavryta as a “martyr town”. During the discussion, the idea of launching a procedure to award similar status to other towns affected by reprisals during World War II emerged. A committee of experts was convened to assess applications of towns for martyr status. While the committee followed official criteria for status designation, it exercised discretion on various occasions, a fact that we will exploit to isolate an exogenous component in martyr status.

Martyr status was a purely honorific designation, with no material benefits for towns that acquired it. However, the martyr label was associated with both greater awareness of local WWII atrocities and a greater visibility of those atrocities in public life. All martyr towns – but not all towns that experienced violence in WWII – commemorate reprisals in some way, and schools in many of them highlight local reprisals when teaching the history of WWII following Greece’s otherwise centralized educational curriculum. As a result, residents of martyr towns have greater awareness than residents of other reprisal locations not only of WWII events, but also of their towns’ martyr designation. We provide more qualitative evidence for this claim when we discuss mechanisms behind the effect of martyr status.

**German-Greek Conflict during the Eurozone Crisis**

The Greek sovereign debt crisis began in late 2009, when revised budget deficit figures revealed the country’s dire financial situation. This discovery led to successive downgrades of its credit rating. Eventually, with debt markets closed to the Greek government, an EU bailout became inevitable. Appendix Table A.1 summarizes the key events of the debt crisis.
From the beginning, the German government was sceptical of a financial rescue for Greece, emphasizing the scale of tax evasion and corruption as key obstacles to any permanent improvement. It finally agreed to the bailout in exchange for harsh austerity measures. Greek public opinion accordingly saw Germany as the instigator of foreign-imposed austerity. Figure A.1 provides evidence of this from our own survey data. Though the majority of respondents (83%) identifies Greek politicians as the single major actor to blame for the crisis, Germany comes in second place (5.58%), and ahead of the EU, the IMF or US-based banks. More tellingly, when respondents are allowed to blame multiple actors for the crisis, blame attribution towards Germany is high. Over 60% of Greeks completely agree with the statement that “Germany imposed austerity measures at a time when Greece was weak. This is what caused the country’s economic crisis.”

The reaction to German-imposed austerity was immediate and intense: in February 2010, the Greek Consumers Association called for a boycott of German products – explicitly highlighting the importance of cars.

Incendiary press coverage amplified the animosity. German newspapers portrayed Greeks as lazy cheaters, living it up at the expense of German taxpayers. The cover page of a German weekly featured Aphrodite making a rude gesture; a tabloid urged Greece to sell some of its islands to repay its debts. As the Greek economy contracted and unemployment surged amid severe cutbacks of govern-

6“German “no” to facilitating the repayment of the 110 billion euros”, Kathimerini, 13 October 2010.
7Public opinion surveys corroborate these patterns. For instance, according to a February 2012 VPRC public opinion poll, a majority of respondents associated Germany with negative emotions, such as anger (41%), disappointment (10.1%), or fear or worry (6.4%). 79% of respondents saw Germany’s role in Europe as negative, 81% believed that Germany’s policies had the goal of economic domination of Europe, and 77% agreed with the statement that “Those who characterize Germany’s current policy as a 4th Reich are right.” There is no indication that Greeks perceived Germany as a positive actor that provided bailout funds. 75% of respondents in the VPRC poll identified Germany’s stance towards Greece as negative.
ment services and support payments, anti-German sentiment in Greece deepened. During the 2012 visit of German chancellor Angela Merkel to Athens, thousands of demonstrators filled the streets of Athens [10].

Memories of Nazi massacres during the Occupation frequently resurfaced in Greece during that period. When a journalist from The Daily Telegraph interviewed Greeks during the Euro debt crisis about their country’s treatment by Germany, the massacre at Distomo immediately came up. A 45-year old bar owner contrasted this with the period immediately preceding the crisis: “Five years ago, no one had any problems with Germany.” In the past, family members of the victims of Distomo had sued for reparation payments, taking their case to the German courts and to the International Court of Human Rights. Although Germany’s Constitutional Court dismissed the case in 2003, it was revived when an Italian court awarded victims’ descendants Italian property owned by a German non-governmental organization. The case reached the International Court in 2012, at the height of the Greek debt crisis, and featured prominently in the Greek press [11].

One may argue that Germany’s aggression in WWII and German-backed austerity in the 2010s were very different events, unlikely to be associated in anyone’s mind. Yet they were not treated as such by Greek media, politicians and ordinary people. The associations made derived from a central similarity between past and present: the identity of the foreign power that was perceived as an aggressor. With Germany identified as the instigator of austerity, parallels were also drawn between the effects of WWII and those of the debt crisis. While not comparable to a historical event that led to mass starvation and the killing of civilians, for many people the debt crisis was one of the worst things they experienced in their lifetimes – businesses bankrupted, meagre pensions cut, savings devastated. The main

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actor involved, the adversarial nature of the situation and the negative implications for people’s lives appear to be the factors that triggered associativity of collective memory in the case of the Greek debt crisis.

**Data and Empirical Strategy**

**Conflict Index**

We compile an index of conflict by computing the frequency of newspaper articles that refer to political tensions between Greece and Germany in a leading Greek newspaper, Kathimerini. We use a supervised learning approach: we first manually code articles relevant to German-Greek conflict and then use search terms distinctive of relevant articles to classify the remaining corpus. We detail our procedure in Section B.1.1 of the Appendix.

Figure 1 plots the share of conflict-related articles for the period 2009–2014. While there is a gradual rise in the overall conflict article share after 2010, there are also numerous short-term spikes, when public arguments between Greek and German politicians grew particularly heated. Several of them are concentrated in 2012, when unrest and protests against austerity in Greece coincided with dissatisfaction around the International Court’s ruling in favor of Germany on the issue of wartime reparations.

**Reprisals, Martyr Status and Memorials**

We create a unique dataset of the universe of Greek towns that experienced reprisals by German occupying forces during World War II. With the help of a professional historian, we combine information from a variety of primary sources and secondary literature. A list of sources is provided in Table B.2. The final list contains 396 towns that experienced reprisals in at least one of the sources we consulted.

72 towns are identified as martyr (Section B.1.2). 54 of them witnessed mass
executions of civilians; the rest were burnt to the ground in retaliation for an insurgency attack against German armed forces in the vicinity (Nessou, 2009).

Figure 2: The geography of German reprisals in wartime Greece

Figure 2 provides a map of German reprisals and of the towns designated as martyred. It shows a high concentration of reprisals in Central and Northern Greece, and on Crete. Though reprisals are correlated with rugged terrain, they are relatively widely dispersed across the territory.

In addition to data on past atrocities and martyr status, we conducted a telephone survey of mayors’ offices in all towns that experienced reprisals to ascertain whether a community organizes a commemorative event or whether a monument exists. There are approximately twice as many towns with a monument or public event as there are places officially recognized as martyred.

Car Registrations

Our main behavioral outcome variable is car sales. We focus on it for three reasons. First, car purchases represent a major purchasing decision, making this variable a good measure of how economic behavior responds to the interaction of time-
varying political conflict and collective memory. Second, cars are an iconic German product. Car sales thus allow us to directly link anti-German sentiment to a behavioral measure; political behavior such as voting is motivated only in small part by anti-Germanism, making the effects of collective memory harder to discern in political outcomes. Finally, from an empirical point of view, data on car sales is available at high frequency, thus allowing us to examine how even short-run changes in the salience of current events interact with latent memory.

We use monthly data on new car registrations from the Greek Ministry of Transport and distinguish between German and non-German brands (see Appendix Section B.1.3). Table B.1 summarizes the car registration data. Our main dataset of time-varying conflict, reprisals and car sales contains information on 51 prefectures over the period January 2008 to December 2014. The main features of the data are summarized in Table B.3.

**Control Variables and Balancedness**

We collect a large number of prefecture-level control variables, including contemporary economic controls from the last pre-crisis Greek Census of 2001 and Eurostat, historical demographic and electoral controls, as well as geographic characteristics of prefectures. While our identification strategy does not require that prefectures with and without reprisals are balanced in terms of observables at baseline, Table B.4 in the Appendix demonstrates that this is largely the case. The only variables that are significantly higher in prefectures with reprisals are log population and the pre-crisis German market share, but these differences disappear when we compare martyr towns to the rest. Our preferred specifications include interactions of all baseline controls with the monthly share of conflict articles to account for any imbalances.
Survey

In the summer of 2017, we conducted a telephone survey in Greece. We sampled a total of 928 individuals from 143 municipalities, distributed across 12 prefectures. Respondents were drawn from 30 martyred municipalities and 113 control towns that did not see reprisals. For each prefecture, we aimed for an approximately balanced sample of respondents between martyred and control towns.\(^{12}\)

In addition to socio-economic characteristics, we collected information on respondents’ actual and ideal car, views of Germany and its role in the crisis, as well as proxies of activism and national identity. Table B.5 in the Appendix provides summary statistics for our survey sample. The sample is balanced on observables – there are no significant differences of age or gender, and the proportion of unemployed is actually higher in the non-martyred locations. The average respondent in a martyred town earned 66 euros less than a respondent in a non-martyred town, but the difference is not significant. Education levels are similar and the cars owned by survey participants are about the same age in both groups.

Empirical Strategy

We begin by estimating the following equation for the share of German car sales in each prefecture \(i\) at time \(t\):

\[
S_{it} = c_i + y_t + m_t + \gamma_1 \text{Article Share}_t + \gamma_2 \text{Article share}_t \times \text{Share towns}_i + e_{it} \quad (1)
\]

where \(S\) is the share of German cars, \(c_i\) are prefecture fixed effects, \(y_t\) are year fixed

\(^{12}\)The survey was conducted using computer-assisted telephone interviewing (CATI) by the Public Opinion Research Unit of the University of Macedonia. Informed consent was obtained by participants over the phone. The survey was approved by the Stanford Institutional Review Board (eProtocol no. 41598).
effects and $m_t$ are calendar month fixed effects that account for seasonality in the German market share.

Our main measure of exposure to German war crimes is the share of a prefecture’s towns that experienced reprisals divided by the total number of towns in existence in 1940. Information on the latter comes from the 1940 Greek census. German occupying forces targeted towns, making the town the cross-sectional treatment unit in our setup. The share of affected towns is thus the most direct way to aggregate a town-level treatment at the prefecture level. $\gamma_2$ is the main coefficient of interest – the extent to which the German car market share declines differentially in prefectures with more towns that experienced reprisals by the Germans during World War II.

The need to aggregate town-level data up to the level of the prefecture – the level at which we have information on car registrations – is an inherent limitation of our setup. In Appendix Section C.5 we show that aggregation has an impact on the precision of our estimates, but does not affect the main conclusions we would draw from an analysis at the town level.\footnote{Aggregation may in fact be a desirable way to analyze our data in the presence of spillovers across towns, for which we show evidence in Sections C.3.2 and C.5 of the Appendix.}

We augment the above specification with interactions of baseline prefecture-level controls with the monthly share of conflict-related articles, as well as interactions of prefecture fixed effects with calendar month fixed effects, to account for prefecture-specific seasonality patterns in car sales.\footnote{Prefecture-level controls include all variables in Table B.4 with the exception of the share of German cars and the first difference in that share pre-2010.} Our most parsimonious specification includes a full set of time (month) fixed effects and thus accounts for any unobservable factor that varies at the monthly level and affects all prefectures in the same way. We cluster standard errors at the prefecture level.
Main Results

We present estimation results from equation in Table 1. The share of conflict articles in a given month is negatively associated with the share of German cars, but the effect is not tightly estimated. However, months of high conflict are strongly and significantly correlated with a decline in German car sales in areas with a higher share of reprisal towns.

In column 2, we add interactions of the conflict article share with pre-crisis control variables. This is intended to capture any differential effect that political acrimony between Germany and Greece after 2010 might have had in areas that were different before the crisis. In column 3, we add an interaction of prefecture fixed effects and calendar month fixed effects, thus accounting for seasonality patterns that potentially differ across prefectures. In column 4 we control for a full set of time fixed effects. The interaction coefficient is not meaningfully affected by these additions.

Table 1: Baseline results

<table>
<thead>
<tr>
<th>Dep. Variable</th>
<th>Share German cars</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Article share</td>
<td>-0.021</td>
</tr>
<tr>
<td></td>
<td>(0.109)</td>
</tr>
<tr>
<td>Article share × Share towns</td>
<td>-1.491**</td>
</tr>
<tr>
<td></td>
<td>(0.734)</td>
</tr>
<tr>
<td>Observations</td>
<td>4,243</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.258</td>
</tr>
</tbody>
</table>

Pre-controls × Article share   | ✓   | ✓   | ✓   |
Prefecture × Calendar month FE | ✓   | ✓   |
Time FE                        | ✓   |

Significance levels: *** p < 0.01, ** p < 0.05, * p < 0.1.

The estimated effects are substantively large, compared to the average pre-crisis market share of German cars which is close to 23%. The most parsimonious specification (column 4) implies that, relative to prefectures without reprisals, a prefecture
with average exposure to WWII violence experienced a 4 percentage point drop in the share of German cars at peak conflict (compared to the pre-crisis period); the most exposed prefecture, with over 30% of towns affected by reprisals, experienced a 17 percentage point drop.

**Ruling out Alternative Explanations**

**Economic effects of the crisis.** During the Eurozone crisis, Greece experienced a severe economic downturn. Poor current economic performance (and the prospect of future contraction) affected car purchases. German cars tend to be more expensive than those from other countries. While non-German brands sold in Europe were worth an average of €23,000 in 2012, the average German car sold for €36,600 – 58% more (European Commission, 2011). In the middle of the largest economic crisis to hit Greece in a generation, the taste for expensive cars may well have evaporated, providing an alternative interpretation of our main finding – if such effects differed by locality.

To account for the effect of the crisis, we employ three strategies, detailed in Appendix C.1. We first show that our findings are unaffected after controlling for a number of variables that capture differential economic performance – including time-varying measures of unemployment and economic policy uncertainty allowed to have differential effects by reprisal status, and a prefecture-level measure of nighttime luminosity that proxies for economic activity. Second, we repeat our analysis by dropping luxury cars, which were more likely to have been affected by the crisis. Third, we use survey evidence on buying intentions to show that distaste, and not empty pockets, stopped Greeks in martyred towns from purchasing German cars. Respondents in martyred towns are not only less likely to own a German car, but also less likely to name a German car as their ideal car (Table C.3). They are also more likely to identify Germany as the actor responsible for the Greek crisis. Intentions and blame attribution serve as direct evidence of anti-Germanism rather
than economic considerations driving car purchases.

**Unobserved culture.** Another concern is that prefectures with a higher incidence of reprisals were characterized by higher pre-war nationalism or a greater ability to organize collectively. If these traits persisted in the modern period, they could independently affect hostility against Germany. Our results would then reflect persistence of a cultural trait, and not the effects of memory.

This interpretation is not supported by our evidence. The presence of reprisals is not correlated with pre-war differences in ideology (Table B.4) and our survey does not indicate differences in nationalism or activism across towns with and without martyr status (Table C.4). To provide additional evidence that effects are driven by the memory of reprisals and not latent propensity to engage in conflict, we use historical information on the Greek partisan war and the logic of guerrilla conflict to isolate exogenous variation in German reprisals. An instrumental variables analysis confirms our main results (Section C.2).

**Civil war violence.** During the last stages of Greece’s occupation by the Axis, violence erupted between different factions of the Greek resistance forces, primarily between the Communist Greek People’s Liberation Army (ELAS) and other non-communist groups. Anti-communist resistance organizations covered a broad ideological spectrum, from republicanism to royalism, and clashed with ELAS over control of territory in the context of a governmental power vacuum. These violent conflicts that took place in 1943-1944 culminated in a sequence of bloody battles in Athens, known as Dekemvriana, and constituted the first phase of the Greek civil war, which was to continue until 1949.

Early civil war violence may confound our results if it overlapped with reprisals committed by German occupying forces. We examine specifically the possibility that civil conflict between Greek resistance factions correlated with or was attributed to German activity, such that our measure of reprisal exposure captures types of conflict dynamics unrelated to Germany. We find no evidence that would
support such a scenario. Civil war battles during 1943-1944 took place in different locations than the majority of German reprisals and there is minimal overlap between civil war violence and violence by German perpetrators at the prefecture level (Appendix Section C.3.1). Explicitly controlling for the share of a prefecture’s towns that experienced civil conflict during the end of WWII reveals no time-varying effect of civil war exposure on anti-German purchasing activity (Table C.7).

**Boycott campaigns.** Since the earliest stages of the debt crisis, consumer groups called for boycotts on German goods. Differential targeting of areas with boycott campaigns and correlated with past reprisals – perhaps because certain locations would be expected to be more responsive to anti-German messaging – could potentially explain part of our observed effects. Yet such a concern does not correspond to the way boycott activity took place in practice.

Between 2010 and 2014 there were two types of boycott campaigns. The first type was led by the Greek Consumers’ Association (INKA) and was national in scope. There is no evidence that INKA targeted particular geographic areas. To the extent that it organized local activities, those took place in Athens, where the association is headquartered.\[15\]

The second type of campaign was grassroots in nature. In this case, campaigns were not led by existing consumer groups; instead, boycott groups spontaneously appeared throughout the country organized through social media. Such boycott activity does not confound our suggested mechanism of associative memory, but rather constitutes an additional piece of evidence in its favor. Since this activity was spontaneous, we might expect areas exposed to German violence during the occupation, to be quicker to form boycott groups against German products. In this sense, like German car sales, boycott activity is a behavioral measure driven by

\[15\] In the Greek press, INKA is mentioned to distribute pamphlets outside its headquarters and outside the German ownership store Media Markt in Athens. “We have not given up on German reparations.” *Ta Nea*, 27 February 2010.
associativity of memory.

We explore this connection between memory and boycott activity by identifying Facebook groups devoted to the boycotting of German products. We geocode the locations of group members with public profiles and compute their distance from the nearest town that experienced reprisals. Figure C.6 in Section C.3.2 of the Appendix shows a strong negative correlation between boycott group membership and repraisal locations. This is consistent with our main findings on consumer behavior: proximity to reprisals is correlated with more intense boycott activity, not as a top-down product of centralized campaigns, but as a consequence of grassroots consumer activism against German products.

**Supply of German cars.** It is possible that the drop in the German car market share in prefectures with more reprisals is due not to demand- but to supply-side changes. To be clear, it would not be problematic for our results if changes in supply were driven by changes in demand, for instance because dealers supply fewer German cars to areas that do not want to buy them. After all, supply and demand are simultaneously determined and we cannot independently identify their changes in our setup.\(^{16}\) We do, however, address the possibility that factors other than anti-Germanism – for instance the economic effects of the crisis or other time-varying unobserved confounders – affected the number of car dealerships that supplied German cars differentially in prefectures with more compared to fewer reprisals.

We scrape information on the location of all car dealerships with an online presence from the webpage car.gr, the largest online market of vehicles and vehicle parts in Greece during the period we study. We capture snapshots of the webpage for all years between 2008 and 2015 and examine over time changes in the distribution of dealerships by location and type of brand sold. This analysis uncovers no ev-

\(^{16}\) Though our survey shows changes in buying intentions, which isolate the demand component fairly well.
idence of a differential drop in the share of dealerships that supply German cars in prefectures with a higher share of towns that experienced reprisals (Appendix Section C.3.3).

**Additional falsification tests.** In Appendix Section C.4 we show that there is no effect of reprisals carried out by Italian and Bulgarian occupying forces, and no effects on the sales of non-German luxury cars, or when using a time-varying measure of conflict with Italy. We also show that patterns of car sales did not differ across prefectures in periods when associative memory was inactive, and that our results are robust to accounting for any remaining imbalances in pre-crisis purchasing behavior. Finally, we demonstrate that our results are not driven by the most widely known massacre locations, that they replicate when using alternative definitions of exposure to reprisals and alternative measures of German-Greek conflict, and that our inference is robust to patterns of serial and spatial correlation.

### Institutionalizing Collective Memory

**The Effect of State Recognition**

We start by providing evidence that the ministerial committee assigned with the task of awarding martyr status to towns affected by reprisals did so by following a relatively simple heuristic. The left plot of Figure 3 is a binned scatterplot of reprisal towns granted martyr status by percentage of destruction, with regression discontinuity curves fitted following Calonico, Cattaneo, and Titiunik (2015). The likelihood of receiving martyr status is increasing in the extent of destruction recorded in ministerial sources. The probability of receiving it jumps around a destruction level of 50%. This is examined more systematically in Figure A.2, which shows how the probability of martyr status being granted changes for alternative cut-offs. 50% is the only level with a significant positive value. As the reading of the committee minutes suggests, there was substantial leeway in making a final determination;
the discontinuity at the 50% cut-off suggests that the committee de facto followed the rule of assigning martyr status to borderline cases whenever half or more of the town was registered as destroyed in official records.

Columns 1-2 of Table A.2 verify the presence of a discontinuity in the probability of receiving martyr status for different polynomials in the destruction variable. Population in 1940 varies smoothly around the 50% threshold (columns 3-4). Importantly, there is no discontinuity in the number of towns that applied for martyr status (right plot in Figure 3 and columns 5-6 of Table A.2). This is evidence that the 50% threshold influenced the decisions of the expert committee directly, and not through the amount of applications that the committee received.\footnote{57\% of towns that experienced reprisals applied for martyr status, and 31\% (or 53\% of those that applied) were eventually granted this designation. Only one town (Kalavryta) was designated as martyr without an official application. Kalavryta was the first town awarded martyr status, and the one that set the precedent for other towns destroyed during the occupation to claim this designation.}

Figure 3: Martyr status and destruction

Notes: Binned scatterplot of towns granted martyr status (left), and towns that applied for martyr status (right) among towns that experienced reprisals, by percentage of destruction. Data restricted to towns with 40\% to 60\% destruction. Regression discontinuity curves with quantile-spaced partitioning follow Calonico, Cattaneo, and Titiunik (2014).

The evidence from the RDD and a close reading of the discussions of the committee minutes suggests that the awarding of martyr status – while correlated with destruction and population loss – also contains an important accidental element.
We therefore ask whether the receipt of martyr status influences German car purchases above and beyond the effect of destruction itself. Panel A of Table 2 replicates results from Table 1 for purposes of comparison. In Panel B, we estimate equation 1 using the share of martyr towns in a prefecture as the source of cross-sectional variation. The differential effect of conflict in prefectures with a higher share of martyr towns is negative and significant. Magnitudes are consistent across specifications and estimated effects are large: relative to a prefecture without martyr towns, the average prefecture with state-recognized memory experienced a drop of 5.2 percentage points in the German car market share at peak conflict.

Next, we conduct a horserace between the time-varying effect of reprisals and of public recognition. We always control for the average extent of destruction in a prefecture, to account for the fact that martyr status is more likely to be awarded to towns with higher estimated levels of destruction. Panel C of Table 2 shows that prefectures with a higher share of martyr towns display large and significant differential drops in the German car market share in months of conflict. Prefectures more exposed to reprisals also register a differential drop, though this is not significant. That means that in a set of two prefectures, with the same average exposure to reprisals, the one with a higher share of officially recognized martyr towns saw a much sharper fall in German market share – officially approved and publicly recognized status as a major victim of Nazi aggression matters over and above the memory of conflict itself.

Finally, we exploit the discontinuity in the awarding of martyr status at the 50% cutoff of destruction to isolate the exogenous component of public recognition. In Panel D of Table 2 we use the predicted share of martyred towns in a prefecture based on the 50% criterion to explain changes in market share. We create a dummy for towns that are assigned a predicted value > 0.5 in a regression of martyr status on a dummy for destruction higher than 50% and a quadratic polynomial in destruction. We then aggregate towns predicted to receive martyr status at the pre-
fecture level, as a share of all towns in 1940. The resulting variable confirms the large and significant effect of martyr status on car sales.

Since we do not have town-level data on car sales, we cannot implement an exact analogue to the RDD specification – showing that a narrow band of destruction driving assignment to martyr status is responsible for declining German market share. Instead, we show that the coefficient on the interaction between martyr status and article share remains negative and significant as the share of towns in a prefecture with destruction in the range of 25-75% increases (Table A.3).

Mechanisms

The results of the previous section indicate that designation of martyr status effectively preserves latent collective memory, which can then become reactivated in the presence of associative stimuli. How is this achieved? Evidence suggests that martyr status designation leads to more intense commemoration activity, directly supported by the state, that not only preserves memory among those affected and their descendants, but also transmits it to members of the community without a direct personal or family experience of past violence. We present this evidence below.

The Implications of Official Recognition

Residents of martyr towns are reminded of WWII reprisals more frequently and more intensely than residents of towns affected by German war crimes but without official recognition. Examples from public life and from local education illustrate this claim.

Public life. Towns that were designated as martyr form part of a network and NGO titled “Martyr towns and villages of Greece, 1940-1945 – Greek Holocausts.”. The expressed purpose of the organization, which was founded in 2000, is to preserve
<table>
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<tr>
<th>Dep. Variable</th>
<th>Share German cars</th>
<th>Panel A: Baseline</th>
<th></th>
<th></th>
<th></th>
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<td></td>
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<td>(1) (2) (3) (4)</td>
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<td>Article share</td>
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<td>-0.765</td>
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<td></td>
<td>(0.109)</td>
<td>(5.847)</td>
<td>(6.375)</td>
<td>(5.895)</td>
<td>(6.522)</td>
<td>(6.522)</td>
</tr>
<tr>
<td>Article share × Share towns</td>
<td>-1.491**</td>
<td>-2.996**</td>
<td>-3.016**</td>
<td>-2.992**</td>
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<tr>
<td></td>
<td>(0.734)</td>
<td>(1.288)</td>
<td>(1.306)</td>
<td>(1.312)</td>
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<td>Observations</td>
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<td>4,243</td>
<td>4,243</td>
<td>4,243</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.258</td>
<td>0.267</td>
<td>0.353</td>
<td>0.391</td>
<td>0.393</td>
<td>0.393</td>
</tr>
</tbody>
</table>

| Panel B: Martyr towns |  |  |  |  |  |
| Article share | -0.006 | -0.765 | 0.602 |
|               | (0.107) | (5.895) | (6.522) |
|               | (2.394) | (2.951) | (2.930) | (2.912) |
| Observations  | 4,159 | 4,159 | 4,159 | 4,159 |
| R-squared     | 0.261 | 0.270 | 0.355 | 0.394 |

| Panel C: Horse race |  |  |  |  |  |
| Article share | -0.014 | -1.831 | -0.699 |
|               | (0.112) | (5.877) | (6.457) |
| Article share × Share towns | -0.031 | -2.279 | -2.805 | -2.829 |
|               | (2.020) | (1.999) | (2.223) | (2.237) |
| Article share × Share martyr towns | -7.037** | -8.469*** | -7.515*** | -7.499*** |
|               | (2.945) | (3.126) | (3.179) | (3.179) |
| Article share × Mean destruction | 0.782 | 2.270 | 2.970 | 3.067 |
|               | (3.650) | (3.775) | (4.240) | (4.252) |
| Observations  | 4,159 | 4,159 | 4,159 | 4,159 |
| R-squared     | 0.261 | 0.270 | 0.355 | 0.394 |

| Panel D: Martyr status predicted by RDD |  |  |  |  |  |
| Article share | -0.023 | -2.539 | -1.198 |
|               | (0.112) | (5.974) | (6.479) |
| Article share × Mean destruction | -1.055 | 1.040 | 1.367 | 1.488 |
|               | (2.275) | (2.494) | (2.782) | (2.767) |
|               | (2.397) | (2.751) | (3.047) | (3.048) |
| Observations  | 4,159 | 4,159 | 4,159 | 4,159 |
| R-squared     | 0.259 | 0.269 | 0.355 | 0.393 |

Pre-controls × Article share ✓ ✓ ✓ 
Prefecture FE × Calendar month FE ✓ ✓ 
Time FE ✓ 

Significance levels: *** p < 0.01, ** p < 0.05, * p < 0.1.
the memory of victims of WWII as well as to continue pushing for reparations for German war crimes. Official martyr status – and not simply exposure to WWII reprisals – forms the basis of network membership, as highlighted in the organization’s founding documents and emphasized in its various announcements.

The network organizes frequent activities to commemorate civilian deaths during the German occupation, and publishes articles on the topic in the local press. Mayors of martyr towns send annual announcements to their communities, signing as part of the “Network of Martyr Towns”, either on the national holiday of October 28 commemorating Greece’s participation in WWII or on the annual memorial of a reprisal attack. Figure D.1 displays an example of such an announcement for the martyr town of Chortiatis. Such actions ensure that the memory of reprisals remains visible and that most residents of martyr towns are aware of their town’s martyr status.

Education. Though Greece’s educational curriculum is centralized and the official content is uniform across locations, local reprisals are emphasized in schools of towns that experienced them and particularly in martyr towns. Various school webpages and blogs illustrate ways in which this is achieved (see examples in Section D of the Appendix). Schools in martyr towns and their neighboring communities educate students on past war crimes in their localities and organize visits to massacre memorials. As in the case of public life, such activities usually take place annually on the occasion of the national holiday or of the memorial of reprisals. They ensure that residents of martyr towns are socialized into the history of their town since a young age, and form the basis of formation and preservation of collective memory.

\[^{18}\text{Information on the organization’s goals and activities can be found at } \url{http://www.greek-holocausts.gr/index.php/2020-02-19-11-15-48/2020-02-19-11-18-08}\]
The Role of Public Commemoration

On occasions when WWII atrocities are commemorated, residents of martyr towns are also reminded of the official martyr status of their towns. Knowledge of martyr status may itself aid in preserving memory, as residents think of their town as exceptional, or of themselves as having a responsibility to remember the past. Is the strength of commemoration or the label itself that aids in preservation of memory in martyr towns? To address this question we systematically measure public commemoration and its effects on the reactivation of memory. Many towns in Greece commemorate World War II atrocities, often by public festivities or through memorials. We conducted a telephone survey of municipal offices in all towns that experienced reprisals and coded whether the community commemorates the violence it experienced with a monument or ceremony.

Panel A of Table 3 shows that the drop in German market share in months of conflict is significantly larger in prefectures with a higher share of towns that commemorate reprisals. The magnitude of the effects is larger than that of repraisal towns (Table 1). Public commemoration is an important vehicle of memory preservation and more memorialization enhances the effects of time-varying conflict in triggering latent memory.

To understand whether public commemoration is the main component of martyr status driving its effects, we separately examine the effect of memorials and of official government recognition in Panel B of Table 3. All towns officially recognized as martyr have a public commemoration or memorial, which is consistent with the evidence above on public commemoration being more intense in martyr towns than in other reprisal towns.

We construct a separate measure for the prefecture share of towns with a memorial that do not have official martyr status. Both martyr status and memorials in the absence of official recognition strongly predict differentially lower German market shares after 2010. The magnitude of their effects is comparable. Martyr status has a
larger effect in most specifications, but the difference between coefficients is not statistically significant in the more parsimonious specifications of Columns 2–4. This suggests that memorials and public ceremonies are central in preserving collective memory. It also indicates that the label of martyr status may not be important on its own, but rather through the degree of commemoration it brings with it.

Taken together, these results suggest that the differential response of consumer behavior to time-varying conflict is increasing in the degree of institutionalization of collective memory, and that institutionalization manifests in more intense commemoration activities in the public sphere.

The Role of Family Transmission

Much of the literature on the legacy of conflict has focused on the role of family transmission as a channel of persistence. Our study instead highlights the role of the state in preserving collective memory through institutionalized commemoration. To what extent is there overlap or interaction between these two processes? Our analysis shows that state recognition has an independent effect on memory and behavior, over and above any process of intergenerational transmission. Based on exogenous variation in the degree of recognition as isolated by a regression discontinuity design, two communities with similar characteristics, and thus presumably similar strength of family transmission, differ in their reactivation of latent collective memory as a result of differences in martyr status.

While intergenerational transmission does not confound the effect of state sanction, it is possible that the two processes interact. Martyr status ensures visibility of the past for an entire community, but its effects on memory preservation could be stronger for community members with personal or family experience of German atrocities [Dinas, Fouka, and Schläpfer, 2021]. If that is the case, then state sanction’s effect may be to intensify the process of intergenerational transmission, by widening the gap in the memory of conflict between those directly exposed to it.
Table 3: Memory and official recognition

<table>
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<th>Dep. Variable</th>
<th>Share German cars</th>
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<td></td>
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<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
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<td><strong>Panel A: Memorials</strong></td>
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<td>(1.009)</td>
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<td>4,159</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.260</td>
<td>0.270</td>
<td>0.355</td>
<td>0.394</td>
</tr>
<tr>
<td><strong>Panel B: Memorials and martyr status</strong></td>
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<td>Prefecture FE $\times$ Calendar month FE</td>
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<tr>
<td>Time FE</td>
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</table>

Notes: Reported p-values are from a test for the equality of coefficients on Article share $\times$ Share memorials (non-martyr) and Article share $\times$ Share martyr. Significance levels: *** p < 0.01, ** p < 0.05, * p < 0.1.
and everyone else.

Our data does not provide strong evidence for this scenario. Figure 4 plots average responses to survey questions capturing anti-German attitudes (see Table C.3) comparing individuals native to a town and others. We define as native those respondents born in the town and with at least one parent born in the town. These individuals may either have been directly affected by reprisals or have had family members who were and thus be carriers of local memory through family transmission channels. With the exception of actual purchasing behavior, there is no immediate visual evidence that differences between martyr towns and control locations come from natives. Though there is an overall tendency for natives in martyr towns to express more anti-Germanism than non-natives, the latter group is also less likely to desire a German car and more likely to blame Germany for the crisis than respondents in control towns. We verify this in Table A.4 where we find no significant interaction effect between a town’s martyr status and a respondent’s native background, either on average or when we control for an additional set of respondent characteristics interacted with the martyr indicator.

**Figure 4: State recognition and family transmission**

![Figure 4: State recognition and family transmission](image)

**Notes:** *Native* refers to individuals born in a town and with at least one parent born in the town. 95% confidence intervals reported.

The survey data then indicates that martyr status does not significantly intensify any effects of intergenerational transmission, or, alternatively, that it does not have more of an impact on those for whom intergenerational transmission is likely more active (natives). Combined with the rest of the evidence in this section, it appears
that state sanction, working through public commemoration and the visibility of the past in various facets of public life, acts uniformly on the entire community and preserves collective memory both for affected members and newer arrivals.

**Political Effects of Institutionalized Memory**

Our analysis so far has demonstrated that associativity and institutionalization of memory can directly affect consumer behavior. Do similar effects extend to other aspects of behavior with more direct implications for politics? In this section, we take up this question by examining whether the reactivation of memories of violence affects voting patterns in Greece during the debt crisis, and whether this effect depends on the degree of state-led recognition of past victimization. It is worth pointing out two a priori weaknesses of this analysis relative to the analysis of consumption patterns. First, though the debt crisis spans several election periods, voting outcomes are not observed at the high frequency of car registration data and do not allow us to examine immediate responses to spikes in Greek-German conflict. Second, electoral choices are determined by a host of party positions and characteristics, of which stances against Germany are only a minor factor. While the nationality of the manufacturer of cars allows us to directly link consumer behavior to consumers’ country-specific attitudes, the link between party choice and parties’ expressed stance on Germany is less direct. Nonetheless, our analysis of voting outcomes yields very similar findings as the analysis of car sales.

We begin by investigating whether voters in areas affected by reprisals were more likely to favor parties that held a critical stance towards Germany during the debt crisis. To identify anti-German parties we take a data-driven approach and analyze the rhetoric of Greek MPs in parliamentary speeches. Figure 5 displays a measure of negative sentiment in MP speeches mentioning Germany, averaged over the 2009-2015 period. Unsurprisingly, MPs of opposition parties are characterized by a more negative tone in speeches referring to Germany compared to the two
major parties of PASOK and Nea Dimokratia (ND). Syriza, the left-wing party that led the anti-austerity opposition forces during the early period of the crisis and took power in the January 2015 legislative election, is significantly more anti-German than PASOK and ND, but less so than the Communist Party (KKE), the conservative Christian party of LAOS or the extreme right party of Golden Dawn which entered Parliament for the first time during the debt crisis.

Figure 5: Average sentiment in MP speeches on Germany

Notes: See Appendix Section B.1.4 for the computation of the sentiment measure. Bars denote averages across all party MPs and years for all speeches containing the token “German.”

To examine the time-varying effect of memory on voting behavior, we compare votes for more versus less anti-German parties before and after the crisis and differentially by past exposure to German war crimes. We use electoral data at the smallest level of administrative divisions, the municipal unit \((N = 1,035)\), and for six legislative elections between 2007 and 2015. The pre-crisis elections of 2007 and 2009 help rule out the presence of pre-trends. We focus on parties that ran in both pre-crisis elections, and group them into more (KKE, LAOS, Syriza) and less
We estimate:

\[ V_{ptm} = \sum_{\tau=\text{Oct 2009}}^{\text{Jun 2015}} \beta_\tau R_m \times 1(t = \tau) + \gamma_m + \zeta_t + \epsilon_{ptm} \]  

(2)

where \( V_{ptm} \) denotes the vote share of party (or group of parties) \( p \) in municipal unit \( m \) and election period \( t \). \( \gamma_m \) and \( \zeta_t \) are municipal unit and election period fixed effects, \( R_m \) is an indicator for municipal units that contain towns with a past of reprisals and \( 1(t = \tau) \) is an indicator equal to one for each election period between September 2007 and June 2015.

Figure 6 shows the results. Effects are relative to the 2007 baseline. There is no difference in vote patterns by reprisal status before the start of the crisis. Beginning with the first post-crisis election in May 2012, vote shares of more and less anti-German parties diverge across municipal units. The vote share of parties critical of Germany increases by up to three percentage points – a percentage equal to the electoral threshold in Greece – in municipal units with past exposure to reprisals. The vote share of PASOK and ND drops. Figure A.3 in the Appendix disaggregates the effects by party. Observed patterns are driven by all parties. LAOS and KKE, the two parties most critical of Germany in Parliament, experienced an immediate surge in their support after the crisis. Support for Syriza increased after June 2012, culminating in the two 2015 elections, when the party had strategically become the most viable opposition force in the fragmented political landscape of Greece. In terms of magnitude, differential support for Syriza is what drives the anti-German vote in reprisal municipal units. In the January and September 2015 elections, Syriza registered a 2 percentage point higher vote share in municipal units that

\[ \text{This leads to exclude Anexartitoi Ellines (ANEL), the right-wing coalition partner of the 2015 Syriza government which did not exist pre-crisis. We also exclude the Golden Dawn, whose vote share was essentially zero in 2009 and which only transformed into a political party, rather than a fringe organization, in 2012. Additionally, support for the Golden Dawn is an ambiguous proxy of anti-Germanism in reprisal locations. Speeches of party MP on Germany are negative in tone, but the party openly employed Nazi symbols and rhetoric.} \]
experienced reprisals.

Figure 6: Vote share by party anti-Germanism and reprisal status

Notes: The figure displays coefficient estimates of $\beta^T$ from equation 2 along with 95% confidence intervals. The dependent variable is, respectively, the aggregate vote share of ND and PASOK (black lines) and Syriza, KKE and LAOS (grey lines). Standard errors are clustered at the municipal unit level.

To mirror the more aggregate analysis of economic behavior, in Section C.5 of the Appendix we replicate these results at the level of the electoral periphery, a unit of analysis close to the prefecture ($N = 56$). We find effects on voting patterns that are identical in direction, but larger in magnitude than those at the municipal unit level, and provide evidence that this difference is due to the presence of spillovers from localities directly affected by reprisals to neighboring localities. This exercise demonstrates that our results in the analysis of car registrations are not the artifact of aggregation bias.

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20 This is consistent with evidence in Section C.3 that membership in Facebook groups that boycott German products is decreasing in the distance to reprisal towns.
Figure 7: Anti-German party vote shares by degree of memory institutionalization

Notes: The figure displays coefficient estimates and 95% confidence intervals for the interaction between election period and indicators for, respectively, reprisal status (black), martyr status (dark grey) and presence of memorials without official recognition (light grey). The dependent variable is the aggregate vote share of Syriza, KKE and LAOS. Standard errors are clustered at the municipal unit level.

These results echo our findings on purchasing patterns and indicate that associativity of memory affects all aspects of behavior, from consumption to political choices. We next turn to the role of institutionalization. The analysis of car sales indicated that behavioral changes in response to reactivated memory were increasing in the degree of state-led memory preservation. To examine whether this pattern replicates in the case of voting outcomes, we estimate equation (2) by including interactions of period dummies with indicators for martyr status and for the presence of memorials in municipal units without official state recognition. Figure 7 displays results remarkably similar to those of Table 3 in the case of cars. The entire differential increase in the vote share of parties critical of Germany comes from municipal units that contain martyr towns. As in the case of car sales, there is no significant difference between officially recognized victimization status and memorialization in its absence. This supports the interpretation that the channel through which state recognition of past violence acts is through the visibility of memory.
in public life. Without such visibility, time-varying conflict fails to trigger associativity. Reprisal towns without official recognition or memorials do not experience differential changes in their voting outcomes post-crisis.

**Conclusion**

When does collective memory affect behavior? We argue that collective memory matters the most when the present is reminiscent of the past, for example by pitting the same groups of “insiders” and “outsiders” against each other. We also show that associativity of collective memory is strengthened through government intervention, by intensifying the presence of “places of memory” – from local plaques and statues to commemorations.

Our main analysis focused on high-frequency movements in political tension across countries and the variation in consumer behavior we examined was monthly. Figure I and additional analyses (Figure A.4) show that consumers responded immediately to Greek-German tension, and effects did not carry over to following months. However, other results point to more than just short-lived changes in behavior and attitudes triggered by associative memory. Election data reveals a divergence between municipalities with different degree of exposure to war crimes that increases over the course of several years. Additionally, we find significant differences in attitudes and buying intentions between martyr towns and towns not affected by WWII violence in 2017, several years after Greek-German relations had calmed down. Collectively, our results suggest that associativity of memory affects high-stakes economic behavior when salience of past events is highest, but can imprint less costly behaviors and attitudes for a longer period of time.

Our findings on changing patterns of consumer behavior could either reflect personal preferences, i.e. a greater dislike of Germany, or concerns over the social acceptability of purchasing a German product. To some extent, social considerations are always a second-order mechanism; residents of martyr towns may worry
about social ostracism or vandalism of their cars exactly because at least some of their neighbors hold deeply seated animosity against Germany. True preferences and social concerns are thus likely to act together to produce the patterns we observe. Two additional pieces of evidence point to the secondary role of social considerations. First, the effects of martyr status are present not only for purchasing behavior, but for purchasing aspirations expressed in the absence of community pressure (to the interviewer). Second, private vote choice follows similar patterns as publicly observable purchasing behavior. Nonetheless, this evidence remains suggestive, as our setup does not allow us to cleanly distinguish between private preferences and social desirability considerations.

One of our study’s central takeaways is that reactivation of collective memory has similar effects on economic and political behavior. We thus help bridge literatures in political science and political economy, which have focused in isolation on either aspect of human decisions. By demonstrating that the official recognition of victim status matters over and above the memory of past violence, our paper is also the first to provide causal evidence for the role of institutionalized collective memory on economic and political decision-making.
References


