

# Zero-Sum Thinking and the Roots of U.S. Political Divides\*

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## ABSTRACT:

We investigate the origins and implications of zero-sum thinking – the belief that gains for one individual or group tend to come at the cost of others. Using a new survey of a representative sample of 20,400 US residents, we measure zero-sum thinking, political preferences, policy views, and a rich array of ancestral information spanning four generations. We find that a more zero-sum mindset is strongly associated with more support for government redistribution, race- and gender-based affirmative action, and more restrictive immigration policies. Furthermore, zero-sum thinking can be traced back to the experiences of both the individual and their ancestors, encompassing factors such as the degree of intergenerational upward mobility they experienced, whether they immigrated to the United States or lived in a location with more immigrants, and whether they were enslaved or lived in a location with more enslavement.

Keywords: zero-sum, redistribution, political values, cultural transmission, policy views.

JEL Classification: N10; Q54.

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## 1. Introduction

In this paper, we explore whether a hypothesis first proposed by anthropologist George Foster (1965, 1967) can help shed light on the contemporary social, political, and cultural dynamics of the United States. Foster hypothesized that many societies harbor a “zero-sum” perception of the world, or as he described it, an “image of limited good.” This worldview implies that the gains of some are invariably the losses of others, based on the underlying assumption that societal output is limited and that efforts and exchanges, rather than creating value, merely reallocate it.

Although Foster developed this hypothesis to study economic beliefs and social relations in rural Mexico, he offered many examples from other parts of the world, and recent research raises the possibility that his insights might be very general (Carvalho et al., 2022). Zero-sum thinking appears to have been prevalent throughout history, ranging from European Mercantilism in the Early Modern period to modern-day trade and immigration policies (Thurow, 1980, Rubin, 2003).

This viewpoint can easily emerge in a world where critical resources and assets are in limited supply, thus generating zero-sum environments. In smaller, pre-industrial societies, finite resources like land, livestock, authority, and social status mean that an increase for one group is invariably a decrease for another. Where markets are underdeveloped and technological progress is minimal, groups often advance at the expense of others. Similarly, during periods of economic stagnation – when resources are scarce – zero-sum perspectives are likely to dominate. Conversely, periods of economic growth – when resources are plentiful – may promote a positive-sum viewpoint. As a result, we expect a zero-sum mentality to be prevalent in various parts of the world at different points in time, resulting in considerable variation across both time and space. Furthermore, due to the enduring nature of cultural and psychological traits, zero-sum thinking may continue to prevail even in situations that are no longer zero-sum, leading to cultural mismatch (Nunn, 2021).

In this paper, we explore the historical and ancestral roots of zero-sum thinking and its implications for political preferences and policy views. To achieve this, we collected detailed survey data from a representative sample of approximately 20,400 U.S. residents. This data combines respondents’ perspectives on various political and policy issues with measures of zero-sum thinking and their personal and ancestral histories. Questions related to ancestry cover their parents and both sets of grandparents, detailing aspects like their locations during different

life stages, life timelines, occupations, education, and income in comparison to other households at the time.

Although we only ask respondents for information up to the grandparents' generation, we can indirectly infer characteristics of the great-grandparents' household. Thus, this approach gives us insights spanning four generations. For instance, knowing where the grandparents grew up tells us about the great-grandparents' residence during their 20s to 40s. Similarly, the economic conditions of grandparents during their upbringing provide insights about the great-grandparents' economic standing. This ability to trace not only the respondents' experiences but also those of their ancestors offers a unique opportunity to study the enduring impact of family history in a more fine-grained and direct way than typically seen in the literature, where location or ethnicity are used to proxy for ancestral experience.<sup>1</sup> In addition, the survey allows us to measure not just ancestral experience in general, but the specific experiences of each generation.

Our analysis yields three contributions. First, we measure the prevalence of zero-sum thinking in the United States. For this purpose, we develop questions asking respondents whether they think that gains for some tend to come at the expense of others. We focus on different situations: the economic well-being of U.S. citizens and non-citizens, trade gains across different countries, wealth gains of different ethnic groups in the U.S., and wealth accumulation of different income classes in the U.S.

Using principal component analysis, we find that the data indicate the presence of a general zero-sum worldview – captured by the first principal component – which has the greatest explanatory power and affects respondents' perceptions of the relationships between individuals or groups in the different scenarios. Using the estimated factor loadings from the principal component analysis, which are positive and of similar magnitude across all four domains, we create an index ranging from 0 to 1, summarizing the degree to which respondents perceive the world in zero-sum terms.

Our second contribution is to highlight the implications of a zero-sum mindset for attitudes and views in the United States. We find that individuals who view the world in more zero-sum terms tend to support policies that redistribute income from the rich to the poor or redistribute access to resources towards disadvantaged groups. These policies include taxation, universal

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<sup>1</sup>A rare exception known to us is Becker et al. (2020), cited below. Akin to our approach, they crafted their own surveys to gauge multi-generational experiences following forced migration in post-WWII Poland.

healthcare, and affirmative action for women and African Americans. They also tend to support more restrictive immigration policies. We also highlight that, while a zero-sum mindset generally correlates with stronger alignment with the Democratic Party (and a weaker alignment with the Republican Party), it is not primarily a partisan issue. Instead, it helps explain variation in views *within* parties. Importantly, we also show that self-reported zero-sum and policy views correlate with real-stakes actions, lending confidence in our measures.

A potential issue is that zero-sum thinking may be associated with other significant values or beliefs that also shape political preferences. To verify that our findings are not skewed by omitted factors, we measure the most relevant and commonly-studied factors in the literature such as the belief in the role of luck versus hard work for success, moral universalism, generalized trust, perceptions of mobility, and the importance of tradition. We assess the sensitivity of our findings to these factors and find that the patterns we document are robust. Thus, a zero-sum mindset does capture a distinct dimension shaping policy views.

Furthermore, we highlight that zero-sum thinking can help us understand some (perhaps puzzling) policy and political preferences in the United States. It helps rationalize why certain groups who stand to gain economically from government redistribution – white, rural, and older populations – tend to oppose government redistribution, while those who stand to lose – urban and younger populations – tend to support it.

Moreover, zero-sum thinking illuminates divisions within political parties. For instance, it is well-recognized that significant coalitions within both parties, including the Democratic Party, support more stringent immigration restrictions. Likewise, within the Republican Party, opposition to government redistribution varies widely, with a notable proportion supporting it. We demonstrate that zero-sum thinking can account for both patterns. Despite the Democratic Party's general stance favoring more open immigration policies, its most zero-sum members lean towards stricter immigration controls, reflecting the belief that immigrants' gains would come at the non-immigrants' expense. Similarly, Republicans with a stronger zero-sum mindset are less likely to oppose government redistribution.

Our third contribution is to trace the roots of variation in zero-sum thinking within the United States. In line with the theory that historical forces can shape zero-sum thinking, we find that an individual's ancestral experiences influence their present-day zero-sum thinking. We focus on factors especially relevant to U.S. history, namely ancestral economic mobility, immigration, and

enslavement. We analyze both their direct effects (e.g., whether the individual's ancestors were immigrants) and their indirect impacts (e.g., whether the ancestors resided in areas with a high share of immigrants).

Starting with economic mobility, the survey asks respondents to rank their economic standing (income) relative to others. It also asks them to rank their own economic status and that of their parents and grandparents during their respective upbringings, compared to other households of those periods. This provides measures of the economic well-being of parents, grandparents, and great-grandparents during adulthood. We can thus construct measures of intergenerational mobility by taking the differences in economic rank between various generations, spanning from the respondent to their great-grandparents. We find consistent evidence that greater intergenerational upward mobility is associated with less zero-sum thinking. The effects are fairly similar for mobility experienced across all generations.

Concerning immigration, we first examine the direct effects of having recent immigrant ancestors. A history of immigration in the family is robustly associated with less zero-sum thinking. The effects tend to be more pronounced for recent episodes of immigration – the relationship is strongest for individuals who are immigrants themselves, followed by the children of immigrant parents, and then by the grandchildren of immigrant grandparents. The findings are consistent with the perception that the immigrant experience benefits the newcomer and their descendants economically without detriment to others.

We also test whether, conditional on one's own immigration experience, living in a county that historically had a significant number of immigrants exerts similar effects. We link our survey information on the locations where parents and grandparents grew up to county-level data on the average share of the population that were immigrants during the Age of Mass Migration between 1860 and 1920. We find that if the respondent's grandparents – and, to a lesser extent, their parents – were raised in a county with a higher number of immigrants, the respondent (their child or grandchild, respectively) possesses a less zero-sum worldview today. This finding aligns with the idea that the perspectives of ancestors are shaped by the newly-arrived immigrants in their vicinity, and these views are subsequently passed on to younger generations, including the respondent. Notably, we do not discover a correlation between zero-sum views and the 1860-1920 immigrant proportion of the county where respondents themselves grew up, suggesting that the place-based effects arising from the waves of immigrants in the late 19th and early 20th centuries

may no longer be present today.

Lastly, we consider slavery, an economic and social system that is inherently zero-sum (or, one might argue, negative-sum). In contrast to mobility and immigration, we anticipate a history of slavery to correlate with more pronounced zero-sum thinking. Accordingly, among all racial groups in the United States, Black respondents emerge as, on average, the most zero-sum (Asian and Asian-American respondents are, conversely, the least zero-sum). We also find that among Black respondents, those who have ancestors who were enslaved have a more zero-sum worldview.

Although antebellum chattel slavery in the U.S. South was the most prevalent form of enslavement for the ancestors of citizens of the U.S. today, other forms of enslavement did occur, such as the internment of Japanese and German Americans, the forced reservation of Indigenous people, indentured servitude, and the imprisonment of Jewish ancestors in concentration camps during the Holocaust. We find that these other forms of historical enslavement are also associated with more zero-sum thinking today.

To further explore other effects of historical slavery, we examine the consequences of growing up in a county with more chattel slavery (measured in 1860). We find that respondents tend to exhibit significantly more zero-sum thinking if they, their parents, or their grandparents grew up in a county with more enslavement historically. Thus, in contrast to the effects of historical immigration, the place-based effects appear to still be present today for enslavement.

We also show evidence for the spillovers of slavery from Southern to non-Southern counties using the migration of white Southerners out of the South. Leveraging data from Bazzi et al. (2023b), we find that respondents who were raised, or had ancestors who were raised, in counties with a higher share of white Southern migrants have a stronger zero-sum mindset. The same patterns emerge when we look at respondents and their ancestors who grew up in counties with a stronger “Confederate culture.” Together with our findings that Black respondents are more zero-sum even after controlling for whether their ancestors were enslaved, and that the marginal effect of enslavement is smaller for Black Americans than for other racial groups, these results suggest the consequences of widespread oppression, institutional bias, and racism faced by all Black Americans, not just those whose ancestors were directly enslaved.

Finally, we check the generality of our findings regarding the impacts and origins of zero-sum thinking by using data from the World Values Survey (WVS) across 72 countries. This survey con-

tains a single question gauging zero-sum thinking. Our analysis reveals that zero-sum thinking aligns with stronger support for left-wing politics, government redistribution, and immigration restrictions, paralleling our U.S. findings. While the history of enslavement and immigration in the United States may have unique features, we expect the effects arising from upward mobility to be more pervasive. Although we lack mobility data for a broad set of countries, we can measure a germane phenomenon: income growth. Therefore, using the WVS data, we check whether the economic growth experienced in the first 20 years of an individual's life affects their zero-sum thinking. Accounting for year of birth and country of birth fixed effects, we find that early-life exposure to economic growth is negatively associated with zero-sum thinking today. This suggests that the observed relationships between zero-sum thinking, political leanings, and policy views, and also the economic determinants of zero-sum thinking may indeed be quite general.

Our findings contribute to our understanding of the role of zero-sum thinking, and related concepts like envy of others' success, for long-term economic development. The dynamic development consequences of zero-sum thinking have been studied theoretically by Gershman (2014) and Carvalho et al. (2022). These studies are particularly applicable to developing countries, where the manifestations of zero-sum thinking identified by Foster such as envy, witchcraft beliefs, and the evil eye are particularly common. While these papers focus either on micro-level data from developing countries (i.e., the DRC) or on historical macro-level relationships, initial indications are that the importance of zero-sum thinking might be more universal than Foster (1965) originally hypothesized. Our study examines the extent to which it is relevant for an industrialized country, in a contemporary setting, and for political and policy outcomes. We also provide evidence of both the variation in, and origins of, zero-sum thinking in a modern industrialized nation. Thus, our findings show that Foster's insights have applications well beyond small-scale pre-industrial societies.

Our work also complements a recent literature in social psychology that seeks to conceptualize, quantify, and better understand the origins and implications of zero-sum thinking (Meegan, 2010, Różycka-Tran et al., 2015, 2019, Piotrowski et al., 2019, Johnson et al., 2022). One of our contributions is to develop a comprehensive, cross-validated measure of zero-sum thinking distilled from survey questions that ask about multiple domains.

The social psychology literature has also highlighted the relevance of zero-sum thinking for

race and gender relations. Norton and Sommers (2011) document that white respondents seem to consider racism a zero-sum game in which decreases in perceived bias against Black people translate into higher “reverse racism” against white people. Wilkins et al. (2015) and Stefaniak et al. (2020) show that high-status groups (white people and men) are more likely to espouse zero-sum beliefs than low-status groups (Black people and women), especially when they feel that their own group is being discriminated against. Our work confirms that zero-sum thinking is also important for attitudes related to race and gender policies and provides evidence about the origins of these views. Furthermore, our method of measuring zero-sum thinking as a mindset and not in one particular context only (e.g., as it relates to race or gender relations) leads to different results; we find that Black respondents are significantly more zero-sum than white respondents and show that this can be traced back in part to the history of slavery and oppression in the United States.

Our work is related to studies that consider the relationship between zero-sum thinking and various political factors. Andrews Fearon et al. (2021) investigate the link between zero-sum thinking and increased hostility and distrust in democratic institutions in the U.S. and in the U.K. Our study provides insights, not on the legitimacy of the political system, but on how zero-sum thinking shapes individuals’ political preferences, particularly beyond standard party affiliation. While our analysis examines a generalized view of zero-sum thinking, research has shown that measured zero-sum thinking varies depending on the context of the question being asked – e.g., economic, racial, immigration-related, etc. (Davidai and Ongis, 2019). This underscores the importance of a measure of generalized zero-sum thinking, which we propose and validate, that is not situation- or context-specific.

Our focus on the historical determinants of zero-sum thinking adds to our understanding of the origins of cultural and psychological traits and supports the recent call to better identify the historical origins of both psychological traits and mental views of how the world works (Muthukrishna et al., 2021). Although not the focus of past research, evidence on the historical determinants of zero-sum thinking can be gleaned from some previous findings. For example, Jha (2013) documents how South Asian cities that were historically engaged in long-distance trade that required the cooperation of Hindu and Muslim merchants tend to have higher levels of trust and lower levels of religious conflict today. Thus, a history of mutually beneficial economic activities (that were primarily not zero-sum) appears to have reduced between-group hostility, with reduced zero-sum thinking a plausible mechanism.



Our paper also contributes to the literature studying the effects of ancestry on the attitudes, values, and beliefs of subsequent generations. Many studies have documented this channel of transmission by examining the descendants of immigrants in the U.S. or Europe. The ancestral environment has been shown to affect gender norms (Fernandez, 2007, Fernandez and Fogli, 2009), preferences for redistribution (Luttmer and Singhal, 2011), trust (Algan and Cahuc, 2010), family structure (Giuliano, 2007), and interpersonal violence (Grosjean, 2014). We complement existing evidence that the values that migrants bring with them can influence the beliefs of those around them (Dippel and Heblich, 2021, Bazzi et al., 2023b,a).

Our findings also add to existing studies that use ethnicity or language to trace effects across generations, including studies of the intergenerational consequences of Africa's slave trades (Nunn and Wantchekon, 2011, Teso, 2018), the nature of pre-industrial agriculture (Alesina et al., 2013, Buggle, 2020), herding (Becker, forthcoming), historical state formation (Michalopoulos and Papaioannou, 2013, Lowes et al., 2017), ethnic partitioning during the Scramble for Africa (Michalopoulos and Papaioannou, 2016), and kinship tightness (Enke, 2019, Schulz, 2022). Rather than proxying for ancestral experiences using ethnicity or location, we measure them directly using large-scale survey data.

The importance of directly measuring ancestral experiences to capture the transmission of effects across generations can be understood through the lens of models of cultural evolution within economics. These models typically assume the vertical transmission (from parents to children) of cultural traits (e.g., Bisin and Verdier, 2000, 2011, 2017, Tabellini, 2008). Tests of cultural evolution generally use either ethnicity or location to trace vertical transmission (e.g., Nunn and Wantchekon, 2011, Voigtlaender and Voth, 2012, Becker et al., 2016). However, this also captures horizontal and oblique transmission and, thus, existing data are often not sufficient to isolate vertical transmission only. By collecting detailed information on the experiences of ancestors, we can better isolate this channel and move towards more adapted tests of such models. Our use of large-scale ancestral surveys complements the study by Becker et al. (2020), which also collects novel information for respondents from Poland to measure ancestral forced migration after WWII. Both studies show that contemporary surveys can be used to test for and trace channels of vertical transmission from parents to children.

The remainder of the paper is structured as follows. Section 2 describes the survey design and data collection. Section 3 presents the political and policy correlates of zero-sum thinking, Section

4 discusses the historical determinants of zero-sum thinking, and Section 5 concludes.

## **2. Survey Design, Data Collection, and Measures of Zero-Sum Thinking**

### ***A. Data Collection and Sample***

#### *Recruiting respondents*

Our sample comprises approximately 20,400 respondents, collected during seven survey waves between October 2020 and July 2023. The survey was completed online with participants recruited through an online survey company, *Respondi/Bilendi*. We designed the survey in-house and the survey company served as an intermediary that invited participants over email or through a dashboard. Respondents were incentivized using a variety of rewards, ranging from cash to extra miles on frequent flyer accounts or points on frequent shopper cards. For more information on how survey companies recruit respondents and how their pools of respondents compare to the population, see Stantcheva (2022).

The survey is approximately 20 to 30 minutes long, depending on the individual respondent and the wave. Appendix Figure A1 shows the distribution of survey duration by wave.

#### *Sample*

To arrive at our analysis sample, we drop individuals who did not complete the full survey or who spent less than 10 minutes on the survey. Table 1 shows descriptive statistics for the analysis sample and shows that it is similar to the broader U.S. population on key socioeconomic characteristics.

Appendix Table A1 shows that around 24% of respondents who start the survey do not complete it, and about one-third of respondents who drop out do so during the background information questions (36%). Older respondents, women, African American respondents, and lower-income respondents are less likely to complete the survey, but the differences are not substantive. Importantly, the differences in the completion rates by political leaning are small.

### ***B. Survey Structure***

Figure 1 shows a block diagram of the survey flow, and Appendix G provides the entire survey questionnaire. Our survey includes the following modules:

Table 1: Sample Characteristics

	U.S. Population	Survey Sample
Male	0.49	0.49
18–29 years old	0.20	0.20
30–39 years old	0.18	0.18
40–49 years old	0.16	0.18
50–59 years old	0.16	0.18
60+ years old	0.30	0.26
\$0–\$14,999	0.09	0.09
\$15,000–\$24,999	0.07	0.09
\$25,000–\$39,999	0.11	0.13
\$40,000–\$54,999	0.11	0.11
\$55,000–\$74,999	0.12	0.13
\$75,000–\$99,999	0.12	0.13
\$100,000–\$149,999	0.16	0.20
\$150,000+	0.22	0.12
4-year college degree or more	0.35	0.48
High-school graduate or less	0.39	0.21
Employed	0.61	0.55
Unemployed	0.02	0.09
Self-employed	0.07	0.07
Married	0.52	0.51
White	0.62	0.67
Black/African American	0.12	0.12
Hispanic/Latino	0.17	0.11
Asian/Asian American	0.06	0.06
Democrat	0.31	0.42
Republican	0.29	0.30
Independent	0.39	0.28
Voted for Clinton in the 2016 presidential election	0.48	0.40
Voted for Trump in the 2016 presidential election	0.46	0.36
Voted for Biden in the 2020 presidential election	0.51	0.51
Voted for Trump in the 2020 presidential election	0.47	0.32
Sample size		20,356

*Notes:* This table displays statistics for the overall U.S. population and compares it to the characteristics of the survey respondents. National statistics on gender, age, income brackets, race, education, marital status, and employment status are from the IPUMS-CPS-ASEC data set for May 2022 (Flood et al., 2022). National statistics on party affiliation for May 2022 are from Gallup (2022). U.S. presidential election results from 2016 and 2020 are from Leip (2022). Survey quotas were designed to achieve a nationally representative sample in gender, age, household income, and race and ethnicity.

**Background of the respondent:** we first ask about the respondent’s own demographic information (such as age and gender) and political leanings.

**Ancestry:** for each of six of the respondent’s ancestors – mother, father, paternal grandfather, paternal grandmother, maternal grandfather, and maternal grandmother – we ask a range of questions aimed at collecting information about their year of birth, residential history, and other relevant characteristics such as education, occupation, and relative economic standing. We collect information about the respondent’s place of residence at different points in their life (e.g., while growing up, in their 20s or 30s, etc.), and we ask where the respondent’s ancestors grew up as well.

Although we explicitly collect information only up to the respondent’s grandparents, some of the information collected tells us about the respondent’s great-grandparents. For example, if we know where a grandparent grew up, this also indicates where the respondent’s great-grandparents were likely living in their 20s, 30s, and 40s. Similarly, we ask our respondents about the economic conditions in their grandparents’ household when they were young. This indicates the economic conditions of the respondent’s great-grandparents early in their adult life. Thus, effectively, we collect socioeconomic information over four generations. Table A3 shows that about 7% of respondents have missing answers regarding their parents’ locations; for grandparents’ locations the share is 16%. The table reports a balance check for missing ancestors’ information. Although there are some characteristics that predict missing information (e.g. younger people are less likely to know their ancestors’ information), the magnitudes are not large. We will systematically control for these characteristics in our analysis.

**Policy views:** we ask respondents about their views on redistribution, race, and gender, among other pressing policy issues.

**Zero-sum thinking:** we ask respondents questions to measure the extent to which they have a zero-sum mindset (explained in Section C below).

To account for possible priming effects, we randomize the order in which respondents view the different modules: half of the respondents are first asked to answer questions about their ancestry and then about their policy views; the other half is asked in the reverse order.

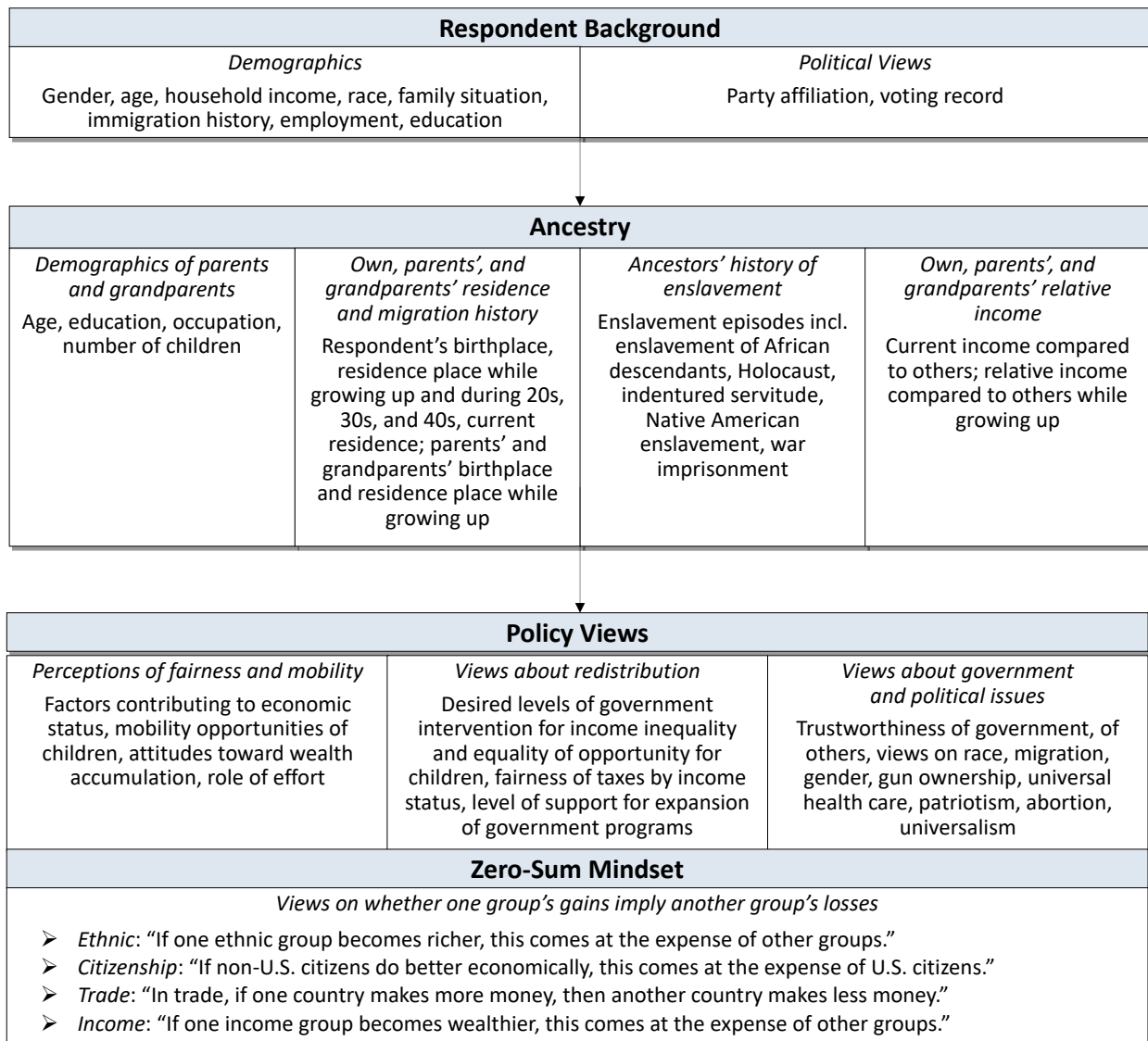


Figure 1: Block Diagram of Survey Flow

### *C. Measure of Zero-Sum Thinking*

Our baseline measure of zero-sum thinking is based on four questions about how zero-sum relationships in different domains are. Each question asks respondents to consider a statement and report the extent to which they agree with it, using the following five options: (1) Strongly disagree, (2) Disagree, (3) Neither agree nor disagree, (4) Agree, (5) Strongly agree.

1. **Ethnic:** “In the United States, there are many different ethnic groups (Blacks, whites, Asians, Hispanics, etc). If one ethnic group becomes richer, this generally comes at the expense of other groups in the country.”
2. **Citizenship:** “In the United States, there are those with American citizenship and those without. If those without American citizenship do better economically, this will generally come at the expense of American citizens.”
3. **Trade:** “In international trade, if one country makes more money, then it is generally the case that the other country makes less money.”
4. **Income:** “In the United States, there are many different income classes. If one group becomes wealthier, it is usually the case that this comes at the expense of other groups.”

We are interested in the general tendency to view the world as zero-sum, i.e., in the zero-sum mindset, rather than in the belief that a particular setting is zero-sum. Respondents’ answers to any single question could be influenced by other factors, such as their political views and their attitudes toward race or immigrants. For instance, more liberal respondents might be less likely to view the scenario described in the immigration question as zero-sum, but more likely to view the scenario in the income question as zero-sum. By triangulating responses to multiple questions, we ensure that our constructed measure reflects zero-sum thinking and not other traits which might factor into respondents’ answers.

The distributions of answers to each question are shown in Figure 2. We assign each answer the integer value indicated above, creating measures that are increasing in how zero-sum a respondent is. We see significant variation in views, with distributions that appear fairly bell-shaped. There are also important differences across domains. Respondents tend to report a more zero-sum view when asked whether the income of the rich comes at the expense of others; in contrast to the other questions, here, “agree” is the most common response. They are slightly less likely to

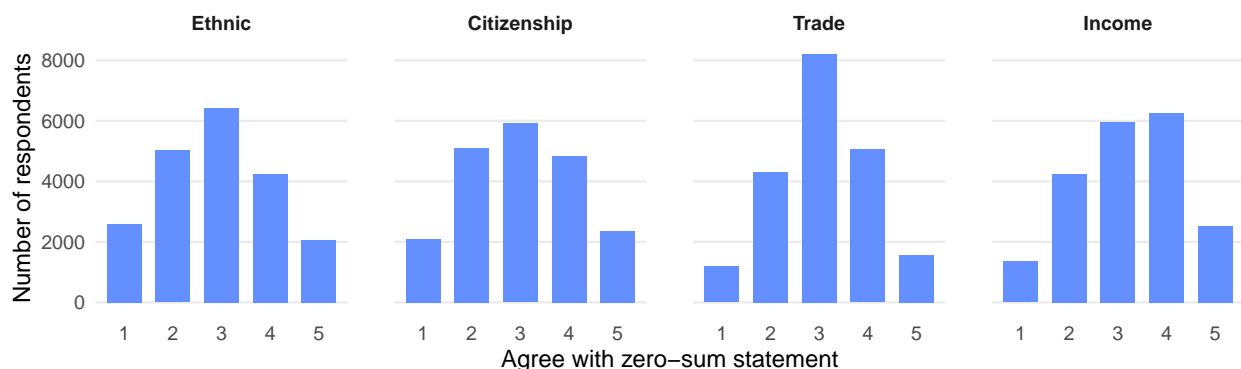


Figure 2: Distributions of Responses to Zero-Sum Questions

*Notes:* The figure shows the distributions of responses to the zero-sum questions, where answer options are (1) Strongly disagree, (2) Disagree, (3) Neither agree nor disagree, (4) Agree, (5) Strongly agree.

report a zero-sum view when asked whether the wealth of ethnic groups comes at the expense of other groups. Lastly, when asked about international trade, respondents are more likely to answer “neither agree or disagree.”

We first check whether these answers reflect an underlying zero-sum worldview. We find that the degree to which a person’s view is zero-sum is highly correlated across these domains, with correlation coefficients ranging from 0.25 to 0.56 (see Appendix Table C1). The correlations are not perfect, as respondents have various beliefs and values related to the specific topics that affect how they answer each question. However, the fact that the correlations are positive and significant is consistent with the existence of an underlying factor that influences responses to all zero-sum questions in the same direction.

A more formal way to test for the presence of underlying factors is principal component analysis, reported in Table 2. We uncover one underlying factor – the first principal component – which is positively related to all four zero-sum measures and has significant explanatory power (an eigenvalue of 2.30). The estimated weights for each question are all of the same sign and even very similar in magnitude, ranging from 0.40 and 0.55, suggesting the presence of a single underlying factor, which we interpret as zero-sum thinking.

We also identify a second underlying factor, which has much less explanatory power than the first (an eigenvalue of 0.77). The only question loading positively on the second principal component is the one related to immigration. All other questions load with much smaller and negative coefficients. Guided by these factor loadings, we interpret the second principal component as capturing anti-immigrant sentiment or “nativism,” which is the desire to protect

Table 2: PCA Factor Loadings: First and Second Principal Components

Question	1st PC (Eigenvalue: 2.30)	2nd PC (Eigenvalue: 0.77)
If an ethnic group becomes richer, this comes at the expense of other groups	0.55	-0.26
If non-U.S. citizens do better economically, this is at the expense of citizens	0.40	0.89
In international trade, if one country makes more money, then the other makes less	0.52	-0.03
If one income class becomes wealthier, it is at the expense of others	0.52	-0.38

*Notes:* The table shows factor loadings for the first two principal components for each of the four component questions of the zero-sum index.

the interests of native-born inhabitants against immigrants.

The estimates that we report in the paper use the first principal component from the factor analysis to create an aggregate measure of zero-sum thinking that we normalize to range from zero to one.<sup>2</sup> The estimates are virtually identical if we use an equally-weighted average rather than the first principal component and/or if we exclude the citizenship measure, which one may worry is particularly influenced by the political views of the respondents, or control for the second principal component.

The variables used the analysis are defined in detail in Appendix B, with summary statistics in Tables B3 and B4.

#### **D. Data Quality: Real-stakes Behaviors and Robustness**

##### *Survey responses versus revealed preferences*

A natural question is to what extent self-reported beliefs and policy views reflect respondents' true attitudes. We therefore include a series of "real-stakes" questions that ask respondents to engage in costly actions (such as donating to organizations or signing a petition in line with the policy views expressed). We describe these questions in Appendix F and show there that respondents' self-reported policy views and beliefs correlate significantly with real actions.

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<sup>2</sup>Specifically, for each observation, we subtract the minimum value of the index and divide by the maximum minus the minimum.



## *Robustness checks*

In addition to many robustness checks related to different parts of the analysis in Appendix C, we perform two in-depth checks on our main results in Appendix D, where we restrict the sample to the most attentive and careful respondents, and in Appendix E, where we test alternative formulations of the zero-sum questions that account for the possibility of acquiescence bias. Our core results are all robust.

### **E. *Correlates of Zero-Sum Thinking***

Figure 3 shows how the average zero-sum measure varies across demographic groups.<sup>3</sup> First, older respondents tend to be less zero-sum. We return to the question of age versus cohort effects and their origins below. Second, Black and Hispanic/Latino respondents tend to be more zero-sum than white respondents. We explore the relationships between race, the experience of enslavement, and zero-sum thinking in Section 4. Third, the lowest-income respondents – those with a household income under \$25,000 – tend to be more zero-sum than higher-income respondents. Fourth, zero-sum thinking is correlated with partisan affiliation: Republican individuals exhibit less zero-sum thinking on average.<sup>4</sup> Finally, more educated respondents are generally less zero-sum.<sup>5</sup>

Figure 4 shows the average zero-sum index by the respondent's current state of residence, indicating that there are no clear regional patterns. Respondents living in Utah exhibit the least zero-sum thinking, on average, and respondents living in Missouri, Oklahoma and Mississippi exhibit the most. Importantly, there is no significant geographic clustering and the geographic distribution of zero-sum beliefs is not obviously correlated with that of political leanings.

### **3. The Political Correlates of Zero-Sum Thinking**

We now turn to an exploration of the potential political consequences of zero-sum thinking.

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<sup>3</sup>Appendix Table C4 shows that these patterns also hold in a multivariate regression where we include all covariates simultaneously.

<sup>4</sup>These patterns, especially the age and income ones, are even stronger and more sharply monotone if we restrict our sample to the most attentive respondents in Appendix D.

<sup>5</sup>It appears that respondents with a postgraduate degree (which includes those with a master's degree, an M.B.A., Ph.D., J.D., or M.D.) are somewhat more zero-sum than less-educated respondents, but this pattern is less robust (see Appendix D).

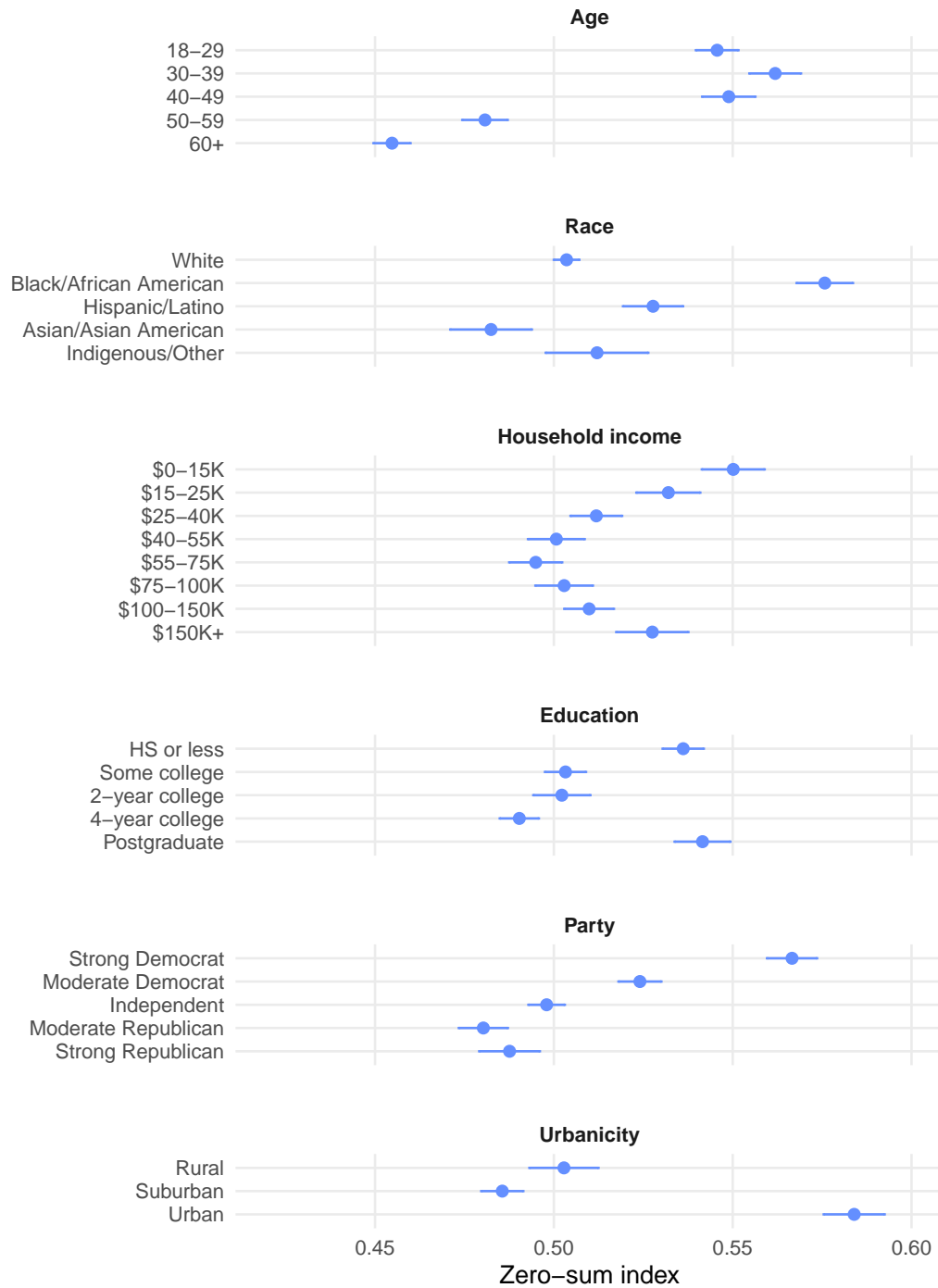


Figure 3: Average Zero-Sum Index by Demographic Group

Notes: Horizontal bars are 95% confidence intervals.

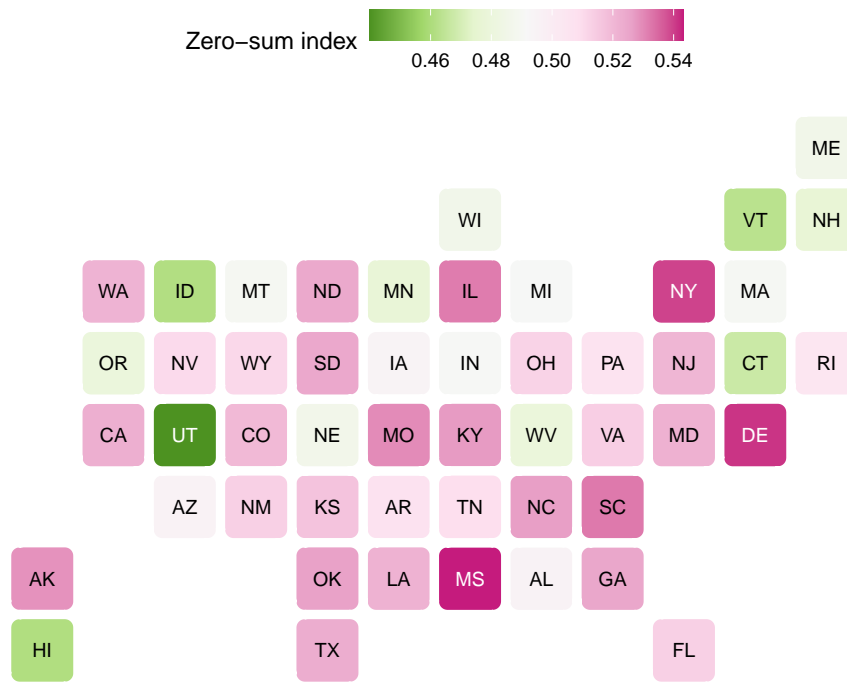


Figure 4: Average Zero-Sum Index by Respondent’s State of Residence

### A. Political Preferences

Although the raw data shows a significant positive relationship between the zero-sum index and Democratic affiliation, zero-sum thinking is not mainly explained by partisan attachment. In Figure 5, we show that although the average level of the zero-sum index is somewhat different between Democrats and Republicans, the distributions are approximately equal in spread; that is, there are Republicans who are comparatively quite zero-sum and Democrats who are not very zero-sum. Moreover, a large fraction of both Democrats and Republicans exhibit moderate levels of zero-sum thinking.<sup>6</sup>

Zero-sum thinking is thus not a partisan issue. There is variation across domains, which underscores again the importance of accounting for multiple dimensions in order to adequately measure zero-sum thinking. Appendix Figure C2 shows the distribution of responses to the four zero-sum questions underlying the principal component measure, by party, and indicates that Democrats are more zero-sum, on average, on issues related to ethnicity, trade, and income, but Republicans are more zero-sum in regard to citizenship.

<sup>6</sup>Appendix Figure C1 shows the proportion of Democrats and Republicans in each quartile of zero-sum thinking.

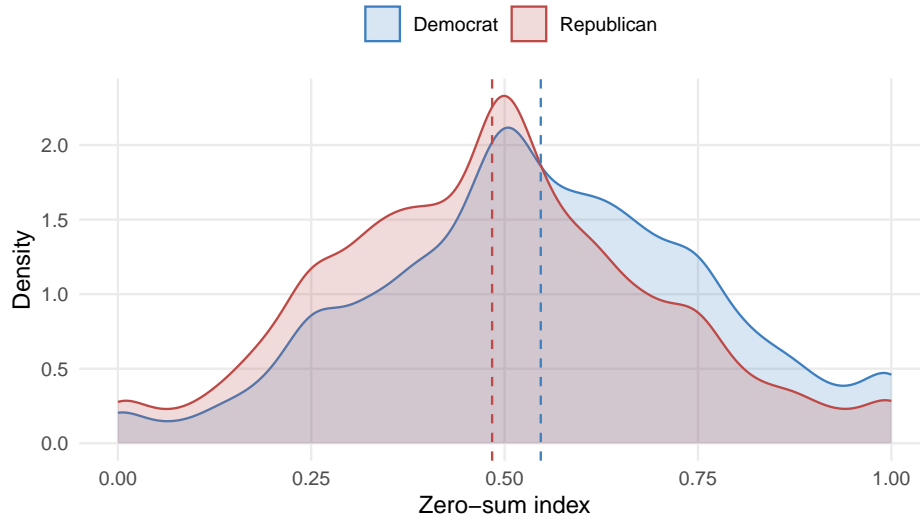


Figure 5: Density of Zero-Sum Index By Party

Notes: Vertical lines show the mean zero-sum index for each political party. “Republican” includes respondents who considered themselves “Strong Republican” or “Moderate Republican”, and “Democrat” includes respondents who considered themselves “Strong Democrat” or “Moderate Democrat.” Those who considered themselves “Independent” are not shown.

## B. Policy Views

We next examine the association between our measure of zero-sum thinking and views about politics and policy. Our estimating equations take the following form:

$$Y_i = \alpha_{s(i)} + \beta \text{Zero Sum}_i + \mathbf{X}_i \boldsymbol{\Gamma} + \varepsilon_i \quad (1)$$

where  $i$  indexes individuals and  $s$  their state of residence.  $\text{Zero Sum}_i$  is our measure of zero-sum thinking for individual  $i$ .  $\alpha_{s(i)}$  denotes state-of-residence fixed effects and  $\mathbf{X}_i$  is a vector of covariates that depends on the specification.  $Y_i$  denotes an outcome of interest.

### *Correlations of zero-sum thinking with policy views*

Figure 6 shows the correlations of zero-sum thinking with important policy views. We compute indices that measure the respondents’ pro-redistribution preferences as well as their race, anti-immigrant, and gender attitudes using the first principal component of the relevant questions from our survey. The questions that constitute each of the indices are listed in Appendix Table B2, along with their factor loadings in the principal component analysis. Appendix Figure C3 shows the full set of correlations with the component zero-sum questions and each of the policy questions in our survey.

A zero-sum mindset involves the belief that the success of some groups comes at the expense of others. We would, therefore, expect more zero-sum-minded respondents to support policies that “correct” for the harm one group imposes on another and help the disadvantaged group. Empirically, we find that zero-sum thinking is associated with support for redistribution, policies to reduce racial and gender discrimination, and restrictive immigration policies.

On redistribution policy, if an individual has a zero-sum view of the world, then the wealth and income of some have come at the cost of others without the same level of wealth or income. In this setting, there is a negative spillover from the rich or wealthy on the less fortunate. As shown theoretically in Piketty et al. (2014), there is then a role for the government to correct this negative spillover and raise aggregate welfare. This could occur, for example, through an income tax used to provide basic public goods or public healthcare, pensions, and social programs. If one’s view is not zero-sum, then the income and wealth of the rich did not come at the expense of others. A positive-sum mindset is exemplified by the “trickle-down” economics view, in which the rich getting richer is a tide that lifts all boats. In this case, taxing and redistributing wealth is considered unfair and likely less efficient as well. Thus, a respondent’s preferred redistribution policy is potentially very different depending on whether they view the world as zero-sum.

Similarly, on gender and racial issues, zero-sum individuals believe that the disadvantaged group is doing worse because of the advantaged group and want to correct this with policies such as affirmative action. By contrast, individuals who do not view the world in zero-sum terms do not see as much justification to help disadvantaged groups.

On immigration, the link between a zero-sum mindset and policy depends on which group is considered disadvantaged and hurt by the other. On one hand, respondents may believe that immigrants are the disadvantaged group if they come from, on average, poorer countries.<sup>7</sup> On the other hand, respondents may perceive that immigrants hurt U.S. citizens and, therefore, U.S. citizens are the disadvantaged group. The data suggests that, on balance, respondents with stronger zero-sum views tend to be more anti-immigration. However, the link is weaker than the relationship between zero-sum thinking and other policy correlations.

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<sup>7</sup>In reality, immigrants to the United States are highly educated and more likely to originate from other rich countries than is the case for, say, immigrants to Western Europe. However, it has been shown that people hold strong misperceptions about immigrants (Alesina et al., 2023).

### *General zero-sum thinking versus domain-specific, mechanical link*

The estimates capture an association between our generalized zero-sum measure and policy views, rather than mechanical relationships between the topic or domain that is part of the zero-sum measure and the domain of the policy view. The results are similar and remain highly significant when we remove from the baseline zero-sum index the question that is most closely related to the policy.<sup>8</sup> Specifically, for the redistribution outcomes, we remove the income zero-sum question; for attitudes towards immigration and towards race we remove the questions about citizenship and ethnicity, respectively. The second column of Figure 6 shows that using the first principal component without the mechanically associated question yields qualitatively similar results.

### *Zero-sum thinking versus other core beliefs*

We also examine the extent to which zero-sum thinking captures a different dimension from other core beliefs that have been shown to correlate with policy views such as the belief that luck is more important than effort for success (Alesina and Glaeser, 2004), a universalist moral view (Enke, 2019), views about the importance of tradition (Giuliano and Nunn, 2021), perceived mobility (Alesina et al., 2018), and generalized trust (Algan and Cahuc, 2010). All of these could potentially shape policy views and be correlated with zero-sum thinking. Reassuringly, Figure 7 shows that the association between zero-sum thinking and policy views holds when controlling for other fundamental attitudes and beliefs. A more formal way of showing this is through a Gelbach decomposition (Gelbach, 2016) of the effect of zero-sum views, shown in Appendix Figure C4.

### **C. Generality of the Findings: Global Patterns**

Our findings from the United States raise the question of generalizability. In particular, if zero-sum thinking is a fundamental psychological mindset that affects individuals' views of the origins of wealth and the acceptability of inequality, and, hence, their policy views and politics, then we should expect similar relationships to hold even beyond the United States.

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<sup>8</sup>Appendix Table C3 compares the factor loadings for these three-question indices of zero-sum thinking to the loadings for the baseline index.

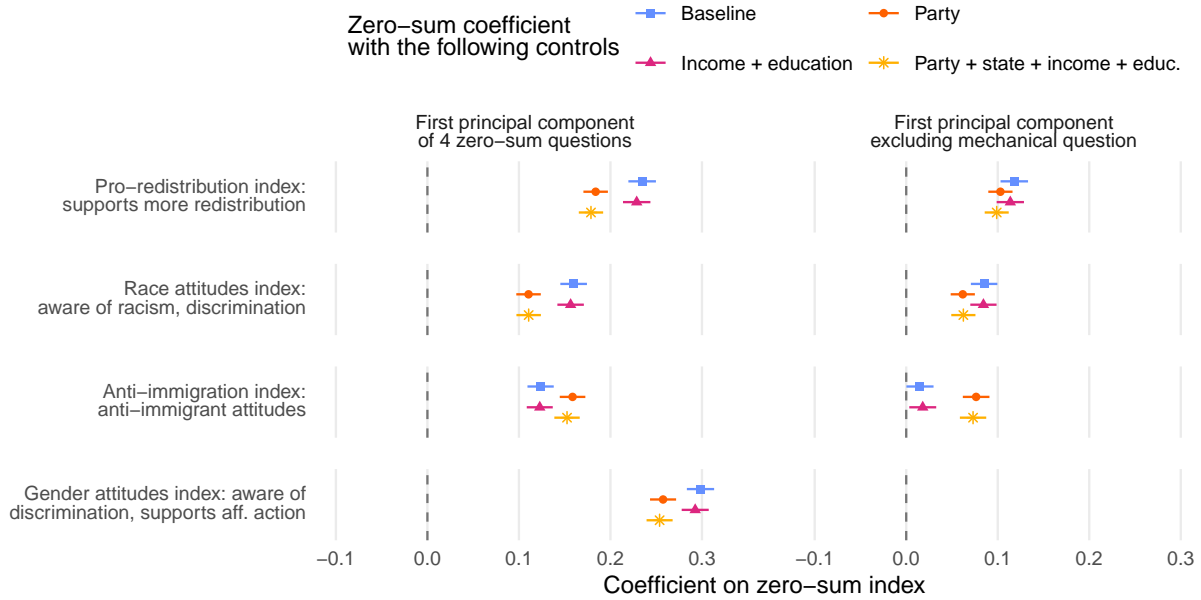


Figure 6: Zero-Sum Thinking and Policy Views

*Notes:* Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, as well as whether the respondent was born in the United States, wave fixed effects, and race fixed effects. The four estimates for each outcome in each column correspond to the baseline specification, as well as specifications that add (1) income and education, (2) party, and (3) income, education, party, and current state fixed effects. Outcomes and regressors are standardized to have mean zero and standard deviation one. All variables are defined in Appendix B, with summary statistics in Table B3. In the first column, the coefficient estimate corresponds to the baseline zero-sum index, that is, the first principal component of the four baseline zero-sum questions about income, citizenship, ethnic groups, and trade. In the second column, the coefficient corresponds to the first principal component of three of the baseline questions, removing the one that may be mechanically correlated with the policy outcomes in that group – income for the redistribution outcomes, ethnic groups for the race outcomes, and citizenship for the immigration outcomes. Index measures are the first principal component of the relevant questions. See Section 3 for details. Horizontal bars are 95% confidence intervals.



Figure 7: Zero-Sum Thinking and Policy Views, Controlling For Other Core Beliefs

Notes: Each coefficient is from a separate regression with controls for age, gender, and their interaction, as well as whether the respondent was born in the United States and fixed effects for survey wave, race, party, household income, education, and current state. The two estimates for each outcome correspond to the baseline specification, as well as specifications that add to the regression a measure of another core belief or attitude: whether the respondent thinks luck is more important than effort, their perceptions of economic mobility, the degree to which they are a moral universalist, whether they think tradition is important, and whether they think people can generally be trusted. The latter three attitudes are only available from the fifth wave of the survey onwards. For each combination of outcome and control variable, the baseline regression is restricted to observations without the control missing, so that each pair of coefficients is estimated on the same sample. Index measures are the first principal component of the relevant questions. All variables are defined in Appendix Appendix B, with summary statistics in Table B3. All variables are standardized to have mean zero and standard deviation one. Horizontal bars are 95% confidence intervals. Appendix Figure C4 performs Gelbach decompositions controlling for all core beliefs simultaneously.



The World Values Survey includes one question, asked to approximately 192,000 respondents across 72 countries, about the extent to which they view wealth as zero-sum. Respondents are given two opposing statements, one that is zero-sum and another that is positive-sum. The zero-sum statement is “People can only get rich at the expense of others.” The positive-sum statement is “Wealth can grow so there’s enough for everyone.” The respondents are asked to report their views on a ten-point scale, which lies between the two extremes.<sup>9</sup> We normalize the answers to lie between zero and one.

We ask the same WVS question in several waves of our survey (to a total of 8,801 individuals) to validate it against our zero-sum composite index. We find that, across this subsample, the two measures are positively correlated and the relationship is highly significant ( $\rho = 0.18$ ;  $p = 0.001$ ). The tightness of the relationship can also be seen in Appendix Figure C7, which reports the binscatter bivariate relationship between the two measures. Thus, although the WVS question focuses on a specific scenario – ‘wealth’ and ‘getting rich’ – it does appear to capture some of the same variation as our richer multi-question index. Therefore, we view it as a valid measure of zero-sum thinking across the world.

We then examine the relationship between a person’s zero-sum view of the world and their political beliefs in the WVS.<sup>10</sup> Figure 8 shows the binscatter bivariate relationship among the pooled sample of all countries, conditional on fixed effects for each country and survey wave. We find a clear negative relationship between zero-sum thinking and right-leaning political views across the world.<sup>11</sup>

We also consider the generality of the relationship between zero-sum thinking and policy views. In Figure 9, we focus on the relationship between zero-sum thinking and preferences for redistribution and immigration restrictions, given the absence of appropriate survey questions on perceived discrimination and support for affirmative action for African Americans and women. The findings are consistent with those for the U.S. from Figure 6. Zero-sum thinking is positively related to both pro-redistribution and anti-immigration attitudes. In addition, the relationship

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<sup>9</sup>This is variable E041, asked in waves 2, 3, 5, and 6 of the WVS.

<sup>10</sup>The question about political beliefs is: “In political matters, people talk of *the left* and *the right*. How would you place your views on this scale, generally speaking?” The respondent then chooses an integer value from 1 (Left) to 10 (Right). This is variable E033 in the WVS.

<sup>11</sup>Appendix Table C5 reports the estimated relationship for each country, and country-specific plots of the relationship between zero-sum beliefs and political leanings are in Appendix Figures C5 and C6.

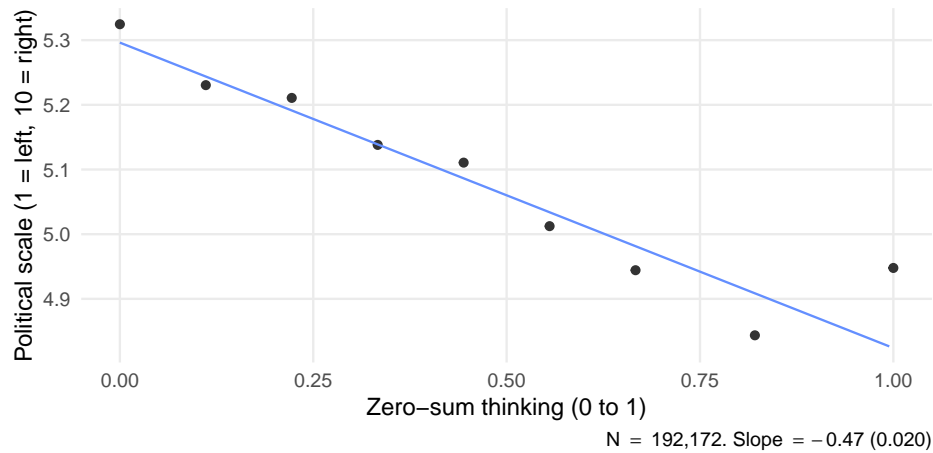


Figure 8: Zero-Sum Thinking and Political Affiliation Across the World

Notes: The figure reports a binscatter partial correlation plot of the relationship between an individual’s zero-sum thinking and their political orientation, conditional on country-by-survey-wave fixed effects. Data are from the World Values Survey, variable E033. The question reads “In political matters, people talk of *the left* and *the right*. How would you place your views on this scale, generally speaking?” with answer options ranging from 1 (Left) to 10 (Right).

with pro-redistribution is stronger than the relationship with anti-immigration and both are robust to the inclusion of income, education, region, and political affiliation fixed effects.

In the WVS sample, we also check that the estimated effect of zero-sum thinking is not only picking up other values and beliefs that might be important for our outcomes of interest. Estimated effects while controlling for the same traits as in Figure 7 are reported in Figure 10. As with our U.S. sample, we find that the effect of zero-sum thinking is very similar when we also account for any of the other belief measures.

#### D. Zero-Sum Thinking and Puzzles Related to U.S. Politics and Policies

As we have seen, zero-sum thinking is not primarily a partisan issue. Instead, it appears to correlate with politics and policy views in more complex ways. In this section, we further develop this aspect of zero-sum thinking by highlighting cases where it helps to better understand some aspects of U.S. political and policy views.

##### *Democrats voting for Donald Trump*

One of the surprising facts that came out of the U.S. 2016 Presidential election, in which Donald Trump was elected over Hillary Clinton, was the extent to which Democrats voted for Donald Trump. According to voting statistics, 13% of individuals who voted for Trump had voted for

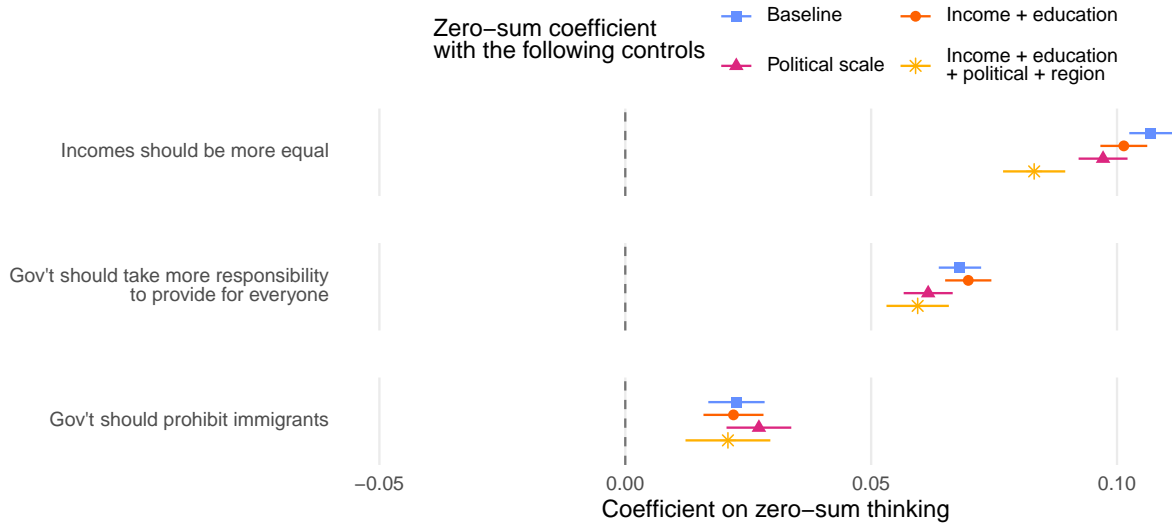


Figure 9: Zero-Sum Thinking and Policy Views Across the World

*Notes:* Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, as well as country-by-wave fixed effects. The four estimates for each outcome correspond to the baseline specification, as well as specifications that add (1) income and education, (2) political affiliation on a left-right scale, and (3) income, education, political affiliation, and region fixed effects. "Income should be more equal" measures respondents' agreements on a ten-point scale with that statement relative to the converse statement that "There should be greater incentives for individual effort." "The government should take more responsibility to ensure that everyone is provided for" measures agreement relative to "People should take more responsibility to provide for themselves." These are variables E035 and E037, respectively. Both were asked in waves 2-7 of the WVS. The final row is based on question asking the respondent "How about people from other countries coming here to work. Which one of the following do you think the government should do?" Respondents can choose: (1) Let anyone come who wants to; (2) Let people come as long as there are jobs available; (3) Place strict limits on the number of foreigners who can come here; (4) Prohibit people coming here from other countries. We create an indicator equal to 1 if the respondent selects the last option. This is variable E143. It was asked in waves 3-5 and wave 7 of the WVS. Outcomes and regressors are standardized to have mean zero and standard deviation one. Horizontal bars are 95% confidence intervals. Data are from the World Values Survey. For the baseline specification, the numbers of observations in each of the three regressions are, from top to bottom, 245,737, 247,177, and 124,692. Adding income and education fixed effects, they are 205,940, 207,041, and 108,985. Adding political scale fixed effects, they are 190,257, 190,674, and 96,329. Adding income, education, political scale and region fixed effects, they are 117,314, 117,519, and 55,730.

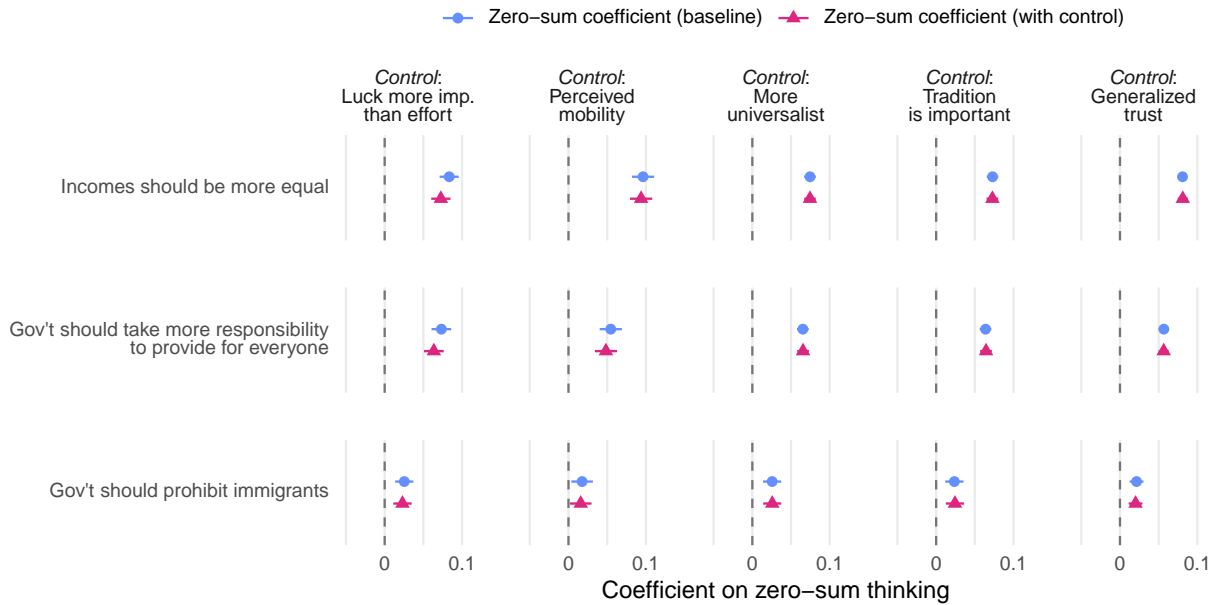


Figure 10: Zero-Sum Thinking and Policy Views Across the World, Controlling For Other Core Beliefs

Notes: Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, as well as country-by-wave fixed effects. The two estimates for each outcome correspond to the baseline specification, as well as specifications that add to the regression a measure of another core belief or attitude: whether the respondent thinks luck is more important than effort, their perceptions of economic mobility, the degree to which they are a moral universalist, whether they think tradition is important, and whether they think people can generally be trusted. These measures have been constructed from questions in the World Values Survey; see Appendix B for more details. Outcomes and regressors are standardized to have mean zero and standard deviation one. Horizontal bars are 95% confidence intervals. For each combination of outcome and control variable, the baseline regression is restricted to observations without the control missing, so that each pair of coefficients is estimated on the same sample. For the first outcome (row) in the figure, the numbers of observations are, across columns: 63,752, 58,069, 106,119, 150,109, and 235,337. For the second outcome, they are 64,073, 58,515, 106,894, 150,929, and 236,677. For the third, 62,353, 55,912, 69,451, 61,414, and 117,814.

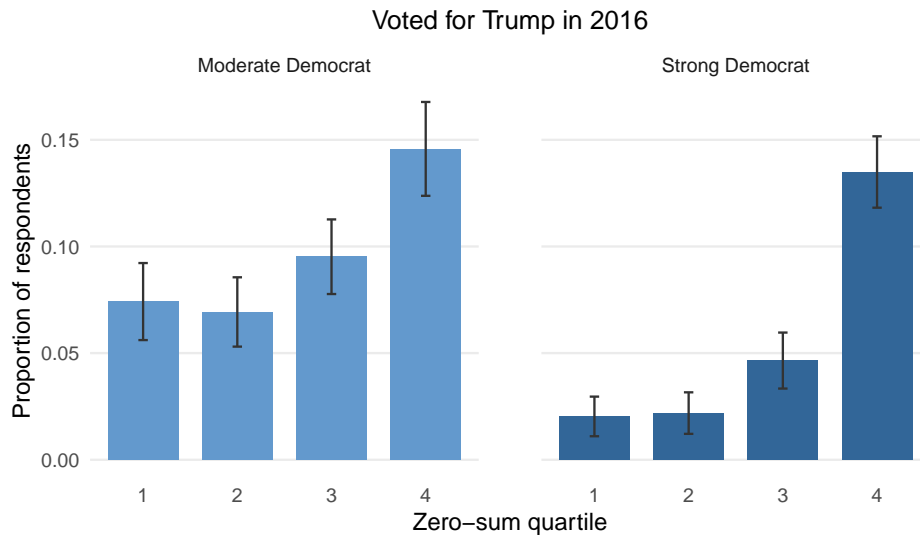


Figure 11: Democrats Voting for Trump by Zero-Sum Quartile

Notes: Vertical bars are 95% confidence intervals.

Barack Obama in the previous election; 12% of Bernie Sanders supporters in the 2016 Democratic primaries voted for Trump.

Many factors generated this outcome, but we find that zero-sum thinking is a strong predictor of this pattern. Figure 11 shows that those in the top quartile of zero-sum thinking among both moderate and strong Democrats voted for Donald Trump at a disproportionately high rate. In general, Donald Trump’s rhetoric was very zero-sum and may have appealed to individuals with a zero-sum view of the world, even among Democrats. He emphasized situations in which individuals or groups are pitted against each other in a (supposedly) zero-sum setting, such as immigrants versus domestic-born people, Muslims versus Christians, China versus the United States, and the anti-establishment versus the Washington elite.

*Preferring policies against one’s economic self-interest*

The patterns documented here also suggest that zero-sum thinking might help to explain why groups sometimes have policy preferences that appear to cut against their own material interests. For example, it is often noted that the white, rural population tends to oppose government redistribution and social programs such as universal healthcare even though they would be net beneficiaries of such programs. Less cited, but similarly puzzling, is why urban, educated elites support these programs when they would, on net, pay for them.

The demographic correlates of zero-sum thinking that we document suggest that the former groups tend not to view the world in zero-sum terms. The rural population is less zero-sum than the urban population, middle-income Americans are the least zero-sum income category, and white Americans are one of the least zero-sum racial groups in the U.S. As we showed above, zero-sum thinking is correlated with stronger support for redistribution.

### *The young and their preferences for redistribution*

Along similar lines, zero-sum thinking helps explain why younger people are more supportive of social welfare programs than older people. This can be puzzling since younger people, because they will live longer into the future, will be more likely to bear the future costs of such programs. Our data suggest that this could be explained by the fact that younger cohorts are much more zero-sum than older cohorts. However, this then raises the question of why younger individuals have a more zero-sum view.

Thus, we compare the economic growth across birth cohorts and the average level of zero-sum thinking of those cohorts. Because the economic performance of the top 1% or even 0.1% skews measures of mean growth, we use the pre-tax income growth of the bottom 50% of the U.S. population. The growth over the first 20 years of life for an individual born in a particular cohort is shown in Figure 12. We see a clear and well-known pattern: prior to 1970, there was a period of prosperity and economic growth, with decadal growth rates ranging from 12 to 88%. Since 1970, there has been a significant decline in growth, with decadal growth ranging from -5 to 14%.

We compare this pattern to the cross-cohort variation in zero-sum thinking, also shown in Figure 12. Older cohorts appear much less zero-sum than younger ones. Thus, the pattern of zero-sum thinking that we observe across cohorts aligns remarkably well with the temporal pattern in aggregate growth data.

Given this, the answer to why younger individuals today are more zero-sum may be that they were born and raised in economic conditions that featured less growth and more stagnation. This economic environment was more likely to be effectively zero-sum.

One concern with the relationship shown in Figure 12 is that it is impossible to disentangle the effects of age from those of varying economic conditions for different cohorts. We therefore examine the link between zero-sum thinking and economic conditions during the first 20 years of a person's life using data from the multiple countries surveyed in the World Values Survey.

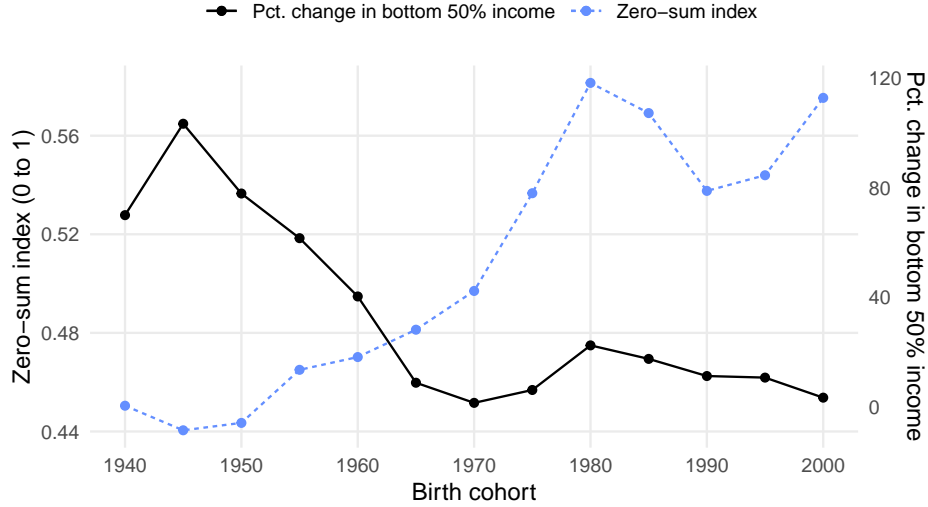


Figure 12: Economic Growth and Zero-Sum Thinking, By Birth Cohort

Notes: The black solid line is the percentage change in bottom 50% income for the first 20 years of an individual’s life, averaged over five-year bins. Data are from the World Inequality Database. The blue dashed line is the average zero-sum index for respondents, also by five-year bins of birth year.

Specifically, we estimate the following equation:

$$\text{Zero Sum}_{i,c,v,t} = \alpha_{c,v} + \alpha_t + \beta \text{Growth}_{c,t} + \mathbf{X}_{i,c,v,t} \boldsymbol{\Gamma} + \varepsilon_{i,c,v,t} \quad (2)$$

where  $i$  indexes individuals,  $c$  indexes countries,  $v$  indexes survey waves, and  $t$  indexes person  $i$ ’s year of birth. The variable  $\text{Growth}_{c,t}$  is the average annual economic growth during the first 20 years of person  $i$ ’s life given that they are from country  $c$  and were born in year  $t$ . The vector  $\mathbf{X}_{i,c,v,t}$  includes the following controls: individual  $i$ ’s age and age squared, gender, and their interactions.

Because we are examining multiple countries, each with different growth experiences, we are able to separately estimate age effects from effects due to economic conditions early in one’s life. Figure 13 reports a binscatter partial correlation plot of the relationship between per-capita growth of the GDP of an individual’s country during the first 20 years of their life and their zero-sum perceptions, and shows a strong negative relationship. Individuals who experienced more economic growth while growing up – accounting for their age at the time they were surveyed – tend to be less zero-sum.

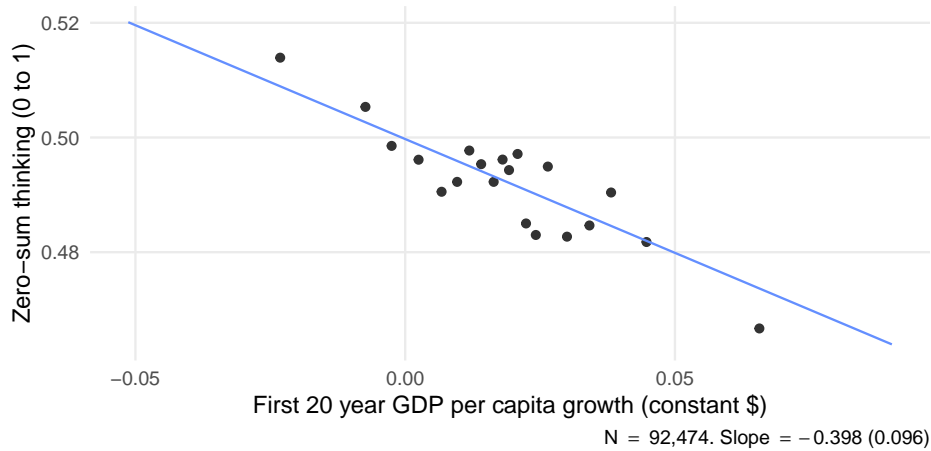


Figure 13: Relationship Between GDP Growth in Childhood and Zero-Sum Thinking

*Notes:* The figure reports a binscatter partial correlation plot of the relationship between per-capita growth of the GDP of an individual’s country during the first 20 years of their life and their zero-sum thinking. Controls include age and age squared and their interactions with gender indicators, as well as birth year and country-by-survey-wave fixed effects. Survey data are from the World Values Survey, and GDP data are from the World Bank.

*Within-party differences and divisions*

Although policy support typically aligns fairly well with party affiliation, there remains significant and important variation in views within parties (Oliphant and Cerda 2019; Bonomi et al. 2021; Gethin et al. 2021). For example, views about immigration policies remain highly variable within political parties: although Democrats prefer weaker anti-immigration measures in general, many within the party are genuinely concerned about immigration (Hanson, 2005). On the other side of the aisle, while Republicans on the whole prefer less government redistribution, many support some policies that provide economic support for the poor (Drutman et al. 2019, Kitschelt and Rehm 2019). We find that individual-level zero-sum thinking provides insights into these intra-party differences.

Figure 14 shows the link between the anti-immigration index and zero-sum thinking among Democrats (in Panel A) and the pro-redistribution index and zero-sum thinking among Republicans (Panel B). Democrats who hold a more zero-sum view are more concerned about immigration and are more strongly opposed to increased immigration. Similarly, within the Republican Party, the most zero-sum individuals are more likely to support redistribution.



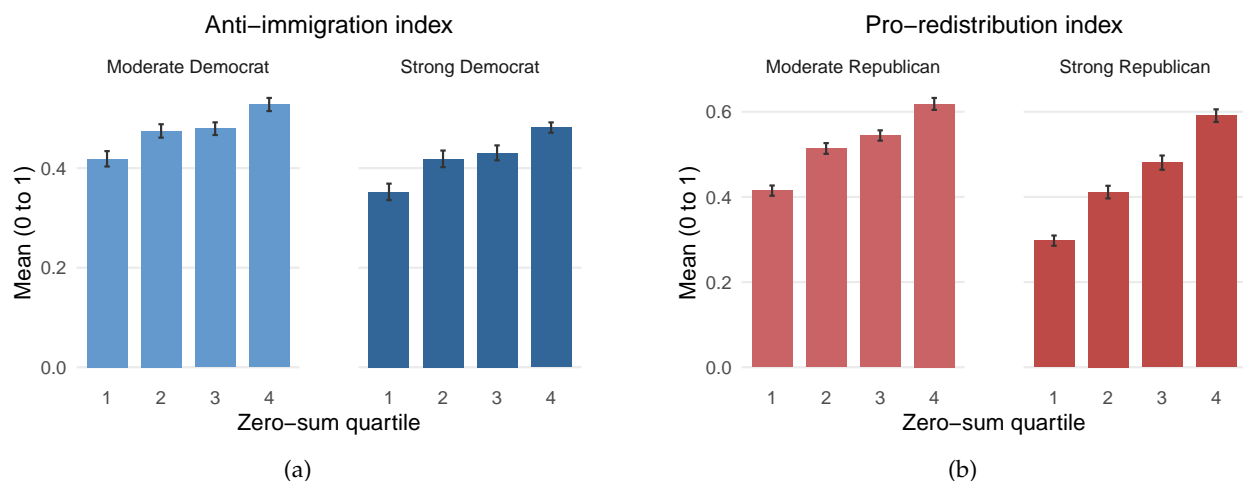


Figure 14: Zero-Sum Thinking and Within-Party Differences

Notes: Vertical bars are 95% confidence intervals.

#### 4. The Historical Determinants of Zero-Sum Thinking

We now turn to the question of the historical determinants of zero-sum thinking. Our analysis examines three key factors that are relevant to the United States historical context, namely, economic mobility, immigration, and enslavement. Conceptually, we expect mobility and immigration experiences and exposure to be associated with less zero-sum views, while enslavement should lead to more zero-sum views.

One of the defining characteristics of the United States is that it was the “land of opportunity,” where rates of upward mobility were higher than in similar industrialized nations (Long and Ferrie, 2013). We expect that individuals who either experienced themselves or whose ancestors experienced upward economic mobility – i.e., the “American dream” – would have less zero-sum views today.

Immigration is another key aspect of U.S. history, not only because of the economic success experienced by those who immigrated and their descendants, but also because immigrants have shaped the locations where they chose to settle (Abramitzky et al., 2014). One hypothesis is that both the direct experience of and exposure to immigration are associated with less zero-sum thinking, since immigrants typically made a better life for themselves in the United States and improved the economic standing of those around them without their success coming at the expense of others (Sequeira et al., 2020). This perception of the sources of their economic success

could have also made them, and those around them, view the world as less zero-sum: the United States was the land of opportunity and anyone could make it if they worked hard enough.

Finally, a history of enslavement and subsequent racial tension permeates the social and political fabric of American society. Chattel slavery was an economic and social system that is fully zero-sum (or, arguably, even negative-sum). An enslaved individual has their resources taken by the enslaver. The enslavers and enslaved do not engage in double-sided matching or mutual agreements of exchange that create value for both parties. Given this, we expect that individuals who have ancestors that experienced enslavement or its aftermath have views that are more zero-sum.

### *Estimating equation*

Our primary analyses consider the determinants of zero-sum thinking that emerge from individuals' own experiences, which affect their values and beliefs and are then transmitted (vertically) to their descendant, the respondent.

The equations we estimate take the following form:

$$\begin{aligned} Zero\ Sum_i &= \beta\ Respondent\ Experience_i + \beta_p\ Parents\ Experience_i \\ &+ \beta_{gp}\ Grandparents\ Experience_i + \mathbf{X}_i\boldsymbol{\Gamma} + \alpha_{s(i)} + \alpha_{r(i)} + \varepsilon_i \end{aligned} \quad (3)$$

where  $i$  indexes survey respondents,  $r$  denotes their race, and  $s$  denotes their state of residence at the time. The variable  $Respondent\ Experience_i$  is a measure of the past experience of respondent  $i$ .  $Parents\ Experience_i$  and  $Grandparents\ Experience_i$  denote the measured experience of respondent  $i$ 's parents and grandparents respectively. Given that an individual typically has two parents and four grandparents, these measures either average across both parents and all grandparents, or we include measures for individual ancestors.

The estimates  $\beta_p$  and  $\beta_{gp}$  provide evidence for the transmission of cultural traits across generations. As we explain in more detail, in some specifications,  $Parents\ Experience_i$  and  $Grandparents\ Experience_i$  will measure ancestral exposure to certain environments. In these cases, the interpretation of  $\beta_p$  and  $\beta_{gp}$  is that they capture the influence on the parents or grandparents and the subsequent transmission of the traits from them to the respondent.

The vector  $\mathbf{X}_{i,c,t}$  includes the following controls: respondent  $i$ 's age, age squared, an indicator for their gender, the gender indicator interacted with age and age squared, and an indicator for

whether the respondent was born in the U.S. We also include fixed effects for the race of the respondent,  $\alpha_{r(i)}$ , and fixed effects for their state of residence when the survey is taken,  $\alpha_{s(i)}$ .

A key contribution of our data collection effort is the inclusion of ancestral measures for several generations. Many studies have examined the experiences of a respondent and shown that they affect various cultural traits. Because of data constraints, it has generally not been possible to examine the analogous experiences of previous generations, which, as we will show below, can affect the estimates.

### **A. Intergenerational economic mobility**

We test for the effects of having experienced intergenerational economic mobility by constructing measures of self-reported upward mobility experienced across generations. Later, we validate these self-reported measures with occupational mobility. For each generation, we ask the following (sets of) questions that measure economic achievement for different generations:

1. **Respondent' household:** *“Right now, compared with other families in America, would you say your own household income is: (1) Far below average; (2) A little below average; (3) Average; (4) A little above average; (5) Far above average.”*
2. **Parents' household (respondent growing up):** *“When you were growing up (i.e. ages 7–17), compared with other families in your country back then, would you say your household income was:”* (same answer options as 1). While we ask about the household income of the respondent when they were growing up, this is equivalently the household income of the respondent's parents as adults.
3. **Grandparents' household (father growing up):** *“When your father was growing up (i.e. ages 7–17), compared with other families in his country back then, would you say his household income was:”* (same answer options as 1).
4. **Great-grandparents' household (paternal grandfather growing up):** *“When your paternal grandfather (father of your father) was growing up (i.e. age 7-17), compared with other families in his country back then, would you say his household income was:”* (same answer options as 1).

We assign an answer to the integer values listed, constructing measures that are increasing in relative economic well-being.<sup>12</sup> The difference in the reported scores across generations provides a measure of intergenerational economic mobility.

We begin by examining the relationship between zero-sum thinking and experienced mobility across one, two, or three generations. These are reported in Figure 15. The first subfigure reports the difference between a respondent's household and their parents' household (question 1 minus 2), the second reports the difference between the respondent and (paternal) grandparents' household (1 minus 3), and the third the difference between the respondent and (paternal) great-grandparents' household (1 minus 4). For all three measures of mobility – over one, two, or three generations – we find a negative relationship between mobility and zero-sum thinking.<sup>13</sup>

Having looked at long-differences in household income between distant generations, we now examine the effects of mobility experienced by each single generation. Mobility measures for each generation are mechanically related. For example, if upward mobility was so high in the past that an individual's relative childhood household income is 5 (the highest possible value), then there is no way that mobility during the next generation can be positive. Thus, the measures will tend to be negatively correlated with one another. If the mobility measures are negatively associated with zero-sum thinking, as we find, then examining one measure while omitting others will lead to downward bias in the magnitude of the estimated effects.

Therefore, we estimate a variant of equation (3) that includes single-generation mobility measures from each generation simultaneously: from parents to respondent (question 1 minus 2), from (paternal) grandparents to parents (question 2 minus 3), and from (paternal) great-grandparents to (paternal) grandparents (question 3 minus 4).

The regression estimates, which are reported in columns 1–3 of Table 3, show that greater intergenerational mobility is associated with less zero-sum thinking. The effect of mobility from parents to respondent is of a similar magnitude to, or even smaller, than the effect of mobility from grandparents to parents, while the effect of great-grandparents to grandparent's is slightly smaller. The fact that we do not find a fully monotonic decreasing effect (like we

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<sup>12</sup>Respondents could also choose "I don't know," which we code as missing.

<sup>13</sup>Interestingly, the relationships appear to be driven primarily by differences in the experience of *upward* mobility, which is associated with a less zero-sum worldview. We find less evidence that differences in the degree of *downward* mobility matter for zero-sum thinking.

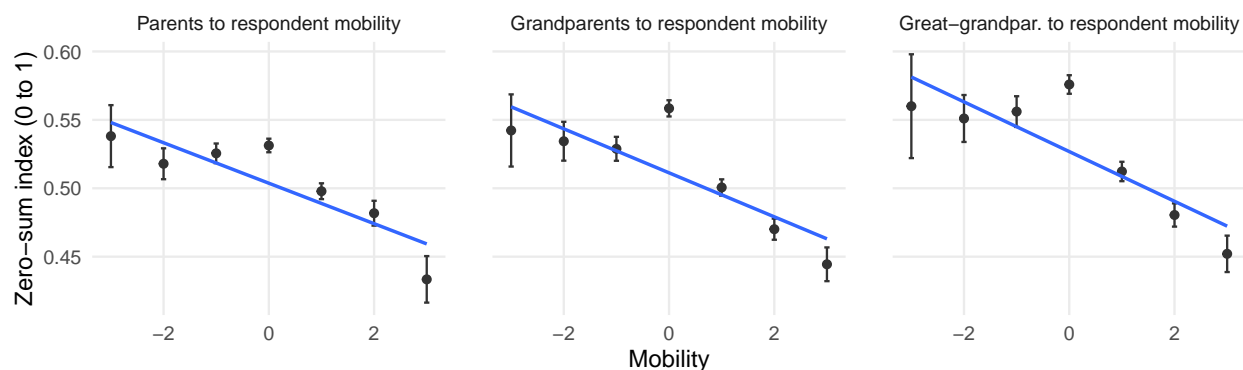


Figure 15: Zero-Sum Thinking and Ancestral Economic Mobility

Notes: Mobility variables measure the change in economic standing between households when each generation was in adulthood. “Grandparents” refers to the respondent’s paternal grandparents, and “great-grandparents” refers to the parents of the respondent’s paternal grandfather. See text for more details. Vertical bars are 95% confidence intervals.

Table 3: Zero-Sum Thinking and Ancestral Economic Mobility

	Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Parents to respondent mobility	-0.0216*** (0.0016)	-0.0218*** (0.0016)	-0.0217*** (0.0016)			
Grandparents to parents mobility	-0.0249*** (0.0019)	-0.0249*** (0.0019)	-0.0246*** (0.0019)			
Great-grandpar. to grandparents mobility	-0.0187*** (0.0023)	-0.0184*** (0.0023)	-0.0188*** (0.0022)			
Great-grandpar. to respondent mobility				-0.0218*** (0.0014)	-0.0219*** (0.0014)	-0.0219*** (0.0013)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓
Race fixed effects			✓			✓
Observations	13,137	13,137	13,137	13,355	13,355	13,355
R <sup>2</sup>	0.120	0.126	0.134	0.119	0.125	0.133
Dependent variable mean	0.529	0.529	0.529	0.529	0.529	0.529
Dependent variable std. dev.	0.222	0.222	0.222	0.221	0.221	0.221

Notes: The table reports OLS estimates where the unit of observation is an individual. Mobility variables measure the change in economic standing between households when each generation was in adulthood. “Grandparents” refers to the respondent’s paternal grandparents, and “great-grandparents” refers to the parents of the respondent’s paternal grandfather. See text for more details. All variables are defined in Appendix B, with summary statistics in Table B3. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

do for immigration in the next section) is potentially explained by the fact that the effect of the respondent's own experience is not exactly comparable to the parent's or grandparent's effects. This is because the respondent, depending on their age, may not yet have fully realized the upward mobility that they will experience, thus our measure of parent-to-respondent mobility is noisier, resulting in attenuation. This possibility is supported by estimates that restrict the sample to respondents 40 and older (see Appendix Table C7).

To confirm that not including all generations' mobility measures can lead to downward bias, we estimate specifications where the measures are included in separate regressions. We find that the estimated effects, shown in Appendix Table C8, are all substantially smaller in magnitude than those from Table 3, consistent with a downward bias when the experiences of all ancestors are not taken into account.<sup>14</sup>

Columns 4–6 of Table 3 report regression estimates using the most long-run mobility measure, great-grandparents to respondent. The estimates show that the patterns in the raw data remain robust when conditioning on demographic covariates.

We perform several robustness checks on these results. First, we confirm that the results are similar when we consider only within-U.S. mobility. That is, we drop individuals whose relative income (in adulthood or childhood) refers to a country other than the U.S., and similarly, whose father or paternal grandfather's relative income refers to a non-U.S. country. These results are in Appendix Table C9. Second, one might worry that a respondent's perceptions of mobility are subjective and correlated with their zero-sum mindset. Therefore, we also use our data on a respondent's and their ancestors' occupations and construct measures of mobility based on occupational scores. Appendix Table C11 confirms that the family's experience of (occupational) upward mobility is significantly correlated with less zero-sum thinking. We also show that controlling for the other ancestral measures studied below (namely having immigrant and enslaved

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<sup>14</sup>We only measure mobility back to the respondent's great-grandparents' lifetimes. However, if the mobility experienced by the respondent's great-great-grandparents also matters for their zero-sum thinking, then not including these measures may bias downward the estimated coefficients for the mobility measures that we do include in the regression.

ancestry) does not affect the results on intergenerational mobility (see Appendix Table C10).<sup>15</sup>

## **B. Immigration**

The next factor that we consider is also particularly salient for the United States: immigration. We measure an individual's immigration history over three generations using the information on place of birth of the respondent, their parents, and their grandparents.<sup>16</sup>

### *Direct effects*

First, in Figure 16, we plot the average zero-sum index for first, second, and third-generation immigrants, as well as for all other respondents. Respondents who were born outside the U.S. but immigrated exhibit the least zero-sum thinking. Second and third-generation immigrants – U.S.-born individuals whose parents or grandparents were born outside the U.S. – show more zero-sum thinking than first-generation immigrants, but still less than other respondents, whose families have lived in the U.S. for more than three generations. Across groups, a family history of (recent) immigration is associated with less zero-sum thinking.

Next, in Table 4, we report estimates of equation (3) with immigration as the independent variable of interest, including indicators for whether the respondent is a first, second, or third generation immigrant (i.e., at least one of their parents or grandparents, respectively, immigrated). The regression results confirm the patterns in the raw data from Figure 16. Being an immigrant is associated with a 9% lower zero-sum index (equivalent to a 20% standard deviation decrease). We expect the effect of parents' immigration to be smaller than one's own experience since it is unlikely that effects are perfectly transmitted to children. This is true in all specifications. The estimated effect of the parents,  $\beta_p$ , is negative and significant and about 70 to 85% the size of

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<sup>15</sup>In addition, we check whether results are different depending on the gender of the respondent or the ancestors we consider. In Appendix Table C12, we split the sample by the gender of respondent and show that results are similar, but slightly stronger for male respondents. In Appendix Table C13, we show similar results using mobility for the respondent's mother and maternal grandmother.

<sup>16</sup>More specifically, if a person resides in the U.S. (which is a requirement of our survey) but was born outside of the U.S., we infer that they are an immigrant. Similarly, if a person was born in the U.S., but at least one of their parents was born outside of the U.S., then we infer their parent(s) immigrated. If an individual was born in the U.S., and their parent was born in the U.S. but at least one grandparent was born outside of the U.S., then we infer that the grandparent(s) immigrated. See Appendix B for detailed variable definitions.

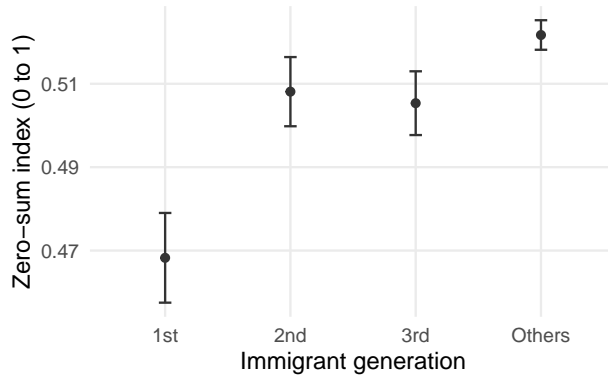


Figure 16: Zero-Sum Thinking and Immigration

Notes: Vertical bars are 95% confidence intervals.

the individual’s own effect. We see further decay of effects when we examine the grandparents’ immigration experience. Overall, we find strong evidence that ancestral migration is associated with less zero-sum thinking.

As with ancestral mobility, the measures of ancestral immigration for different generations are mechanically related. If any generation immigrates to the U.S., subsequent generations, who are U.S. born, cannot be immigrants to the U.S. If immigration leads to less zero-sum thinking, this negative relationship between the measures will lead to estimates that are biased towards zero. For completeness, we also report specifications with the measures included one at a time in Appendix Table C14. As expected, we obtain similar but smaller estimates, as was the case for mobility.

### *Indirect effects*

We next use experience measures that reflect the respondent’s and their ancestors’ environments, namely the exposure to immigrants in the counties where the respondent and their ancestors grew up. We focus on the most important episode of immigration in the recent history of the United States: the “Age of Mass Migration.” Following Sequeira et al. (2020), we measure the intensity of immigrant settlement during the Age of Mass Migration with the share of the population of a county that is foreign-born, averaged over each decadal census from 1860–1920.

Estimates of equation (3) with these historical immigration measures as the independent variables of interest are reported in Table 5. Columns 1–3 report estimates where the independent variable of interest is the intensity of immigrant settlement during the Age of Mass Migration in



Table 4: Zero-Sum Thinking and Immigration

	Zero-sum index (0 to 1)		
	(1)	(2)	(3)
Respondent immigrated	-0.0499*** (0.0058)	-0.0524*** (0.0059)	-0.0459*** (0.0067)
Parent immigrated	-0.0324*** (0.0047)	-0.0353*** (0.0049)	-0.0311*** (0.0053)
Grandparent immigrated	-0.0046 (0.0041)	-0.0047 (0.0042)	-0.0011 (0.0042)
Demographic controls	✓	✓	✓
Wave fixed effects	✓	✓	✓
State fixed effects		✓	✓
Race fixed effects			✓
Observations	18,696	18,696	18,696
R <sup>2</sup>	0.078	0.084	0.092
Dependent variable mean	0.512	0.512	0.512
Dependent variable std. dev.	0.212	0.212	0.212

*Notes:* The table reports OLS estimates where the unit of observation is an individual. Since all respondents are in the U.S. when surveyed, we define “Respondent immigrated” as an indicator equal to one if the respondent was born outside the United States. “Parent immigrated” is an indicator equal to one if the respondent was born in the U.S. and at least one of their parents was born outside the U.S. This variable is missing, and hence the respondent is not included in the regression, if they indicated that they do not know whether either of their parents was born in the U.S. “Grandparent immigrated” is an indicator equal to one if the respondent was born in the U.S. and either (1) their father was born in the U.S. and at least one paternal grandparent was born outside the U.S., or (2) their mother was born in the U.S. and at least one maternal grandparent was born outside the U.S. This variable is missing, and hence the respondent is not included in the regression, if they indicated that they do not know where any of their four grandparents were born. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. All variables are defined in Appendix B, with summary statistics in Table B3. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

the county where the respondent grew up. Columns 4–6 report estimates for the same measure averaged over the counties where the respondent’s parents grew up, and columns 7–8 report estimates for the average of the respondent’s grandparents’ counties. We include measures of whether the respondent or their own ancestors were immigrants (i.e., we control for direct immigration experience).

The estimates show a connection between the zero-sum thinking of the respondent and the share of immigrants during the Age of Mass Migration, particularly in the grandparents’ location and to some extent the parents (similar magnitude but less precise). This link, however, is not evident for the locations of the respondents themselves. The estimated coefficients for the respondent’s ancestors are negative (although only significant for the grandparents), suggesting that a larger presence of immigrants is associated with less zero-sum thinking. The more precise estimates for grandparents’ locations is potentially explained by the fact that they lived more

Table 5: Zero-Sum Thinking and County Foreign Share 1860-1920, With Immigrant Generation Controls

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county foreign share	0.0147 (0.0278)	0.0198 (0.0285)	0.0235 (0.0282)						
Parents' counties foreign share				-0.0355 (0.0236)	-0.0323 (0.0233)	-0.0351 (0.0272)			
Grandparents' counties foreign share							-0.0392*** (0.0106)	-0.0389*** (0.0105)	-0.0374*** (0.0111)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
2nd generation immigrant		✓	✓		✓	✓		✓	✓
3rd generation immigrant			✓			✓			✓
Observations	17,520	17,412	16,175	15,801	15,799	14,839	12,486	12,481	12,481
R <sup>2</sup>	0.072	0.073	0.075	0.082	0.083	0.085	0.085	0.085	0.085
Num. clusters	1,969	1,968	1,934	2,164	2,164	2,131	2,002	2,002	2,002
Dependent variable mean	0.507	0.507	0.505	0.509	0.509	0.508	0.511	0.511	0.511
Dependent variable std. dev.	0.205	0.206	0.207	0.209	0.209	0.209	0.211	0.211	0.211
Indep. variable mean	0.173	0.173	0.173	0.176	0.176	0.176	0.165	0.165	0.165
Indep. variable std. dev.	0.124	0.124	0.124	0.124	0.124	0.124	0.124	0.124	0.124

Notes: The table reports OLS estimates where the unit of observation is an individual. "Foreign share" refers to the proportion of individuals in a county who were born outside of the U.S., averaged over the 1860 to 1920 period. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. All variables are defined in Appendix B, with summary statistics in Tables B3 and B4. Standard errors are clustered by the respondent's county, parents' counties, or grandparents' counties, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

closely in time to the historical immigration waves, and the effects of this more-direct exposure was then transmitted to the respondent. The lack of a relationship for a respondent's county suggests that the 1860-1920 wave of immigration may not have resulted in place-based effects that continue to matter for zero-sum thinking today. The findings highlight the imprecision that can arise from using a person's location to measure historical experiences and, thus, the importance of directly measuring ancestral experiences.

The estimated effects of ancestors' locations are very similar when we control for whether the respondent's ancestors were immigrants themselves, suggesting that the relationship is not just because immigrants tend to locate where other immigrants live. Instead, the results are consistent with the transmission of non-zero-sum beliefs from immigrants to those around them, and the subsequent transmission of those values to the respondent.

### *C. Enslavement*

#### *Direct effects*

The final factor that we consider – a particularly important one in the U.S. historical context – is enslavement. Because of its close ties with race, we begin by examining the relationship between race and zero-sum thinking. We estimate a variant of equation (3) where the independent variables of interest are indicator variables for the race of the respondent. The estimated coefficients are reported in Table 6, where the omitted racial category is “European American/white.” The estimates show that Black individuals are more zero-sum than individuals of any other race. Hispanic/Latino respondents are slightly more zero-sum than white respondents, and Asian/Asian American respondents are less.

Since race is highly correlated with other factors that might affect one’s zero-sum view of the world, including educational attainment, income, and place of residence, we sequentially add these covariates to the regressions to assess the stability of the racial differences. In general, the coefficients remain robust, particularly the coefficient for Black individuals. The estimate for the fully saturated specification (column 5) is very similar to that of the most parsimonious one (column 1).

The fact that Black Americans tend to show more zero-sum thinking is potentially partially explained by the fact that their ancestors were often enslaved individuals. Slavery was a relationship between enslavers and enslaved people that was fully zero-sum and, arguably, even negative-sum. Therefore, we expect a history of coercive experiences to be associated with more zero-sum views today.<sup>17</sup>

To check for this possibility, we focus specifically on Black respondents and check whether those who had ancestors who were enslaved are more zero-sum today. In the survey, we asked respondents if any of their ancestors had been enslaved and, if they had, to describe who had been enslaved and in what form. We used open-ended questions so that respondents could freely express what they consider forms of enslavement. We estimate a version of equation (3) where the independent variable of interest is an indicator that equals one if the respondent indicates

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<sup>17</sup>That Asians and Asian Americans are less zero-sum is potentially explained by the fact that historically these societies tended to engage in wet rice cultivation, an activity that required extensive coordination and cooperation within a local area (Nisbett, 2003). Thus, for these societies, the historical environment may have been less zero-sum, with extensive gains from cooperation.

Table 6: Zero-Sum Thinking and Race

	Zero-sum index (0 to 1)				
	(1)	(2)	(3)	(4)	(5)
African American/Black	0.0620*** (0.0047)	0.0594*** (0.0048)	0.0594*** (0.0048)	0.0555*** (0.0048)	0.0552*** (0.0059)
American Indian or Alaska Native	-0.0087 (0.0151)	-0.0079 (0.0152)	-0.0078 (0.0152)	-0.0106 (0.0151)	-0.0033 (0.0182)
Asian/Asian American	-0.0217*** (0.0066)	-0.0227*** (0.0069)	-0.0197*** (0.0069)	-0.0198*** (0.0069)	-0.0266*** (0.0097)
Hispanic/Latino	0.0022 (0.0049)	-0.0005 (0.0051)	0.0004 (0.0051)	-0.0015 (0.0051)	-0.0078 (0.0065)
Native Hawaiian or Other Pacific Islander	0.0046 (0.0260)	0.0108 (0.0268)	0.0126 (0.0267)	0.0105 (0.0270)	-0.0156 (0.0310)
Other race	-0.0034 (0.0091)	-0.0038 (0.0091)	-0.0046 (0.0090)	-0.0068 (0.0090)	-0.0047 (0.0103)
Demographic controls	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓	✓
Education fixed effects			✓	✓	✓
Household income fixed effects				✓	✓
Birth town fixed effects					✓
Observations	20,282	20,282	20,282	20,280	18,857
R <sup>2</sup>	0.082	0.086	0.092	0.094	0.272
Dependent variable mean	0.514	0.514	0.514	0.514	0.517
Dependent variable std. dev.	0.211	0.211	0.211	0.211	0.211

*Notes:* The table reports OLS estimates where the unit of observation is an individual. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. State fixed effects refer to the respondent's current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

that at least one of their ancestors was enslaved in some manner. The estimates are reported in columns 1 and 2 of Table 7. We find evidence that slavery might be an important factor. Black individuals who report having an ancestor who was enslaved tend to be more zero-sum.

An important caveat is that many Black Americans do not know with certainty whether their ancestors were enslaved. In our sample, the share of Black respondents who answer “don’t know” is 44%. This share is similar to other surveys that ask about ancestral enslavement. For example, in a recent Pew survey, 34% of Black Americans answered “don’t know” when asked whether their ancestors were enslaved (Cox and Tamir, 2022). Our analysis codes these answers as zero for our enslavement measure, thus only 40% of Black respondents in our sample are coded as having an ancestor who was enslaved, which is almost certainly lower than reality. While the direction of the bias is unclear, this may attenuate the estimates of interest.

While the focus of our survey question was to measure a history of enslavement under chattel slavery among individuals with ancestors from Africa, the breadth of the measure captures other forms of enslavement, including imprisonment or internment during war, concentration camps

Table 7: Zero-Sum Thinking and Ancestral Enslavement

	Zero-sum index (0 to 1)							
	Black only		Latino, Indig., Asian, other		White only		Full sample	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Enslaved ancestor	0.0162* (0.0083)	0.0168** (0.0083)	0.0523*** (0.0118)	0.0519*** (0.0120)	0.1574*** (0.0088)	0.1562*** (0.0088)	0.0873*** (0.0056)	0.0872*** (0.0055)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	-	-	-	-	-	-	✓	✓
State fixed effects		✓		✓		✓		✓
Observations	2,419	2,419	4,205	4,205	13,650	13,650	20,274	20,274
R <sup>2</sup>	0.030	0.053	0.057	0.068	0.118	0.124	0.095	0.100
Dependent variable mean	0.576	0.576	0.511	0.511	0.503	0.503	0.514	0.514
Dependent variable std. dev.	0.198	0.198	0.204	0.204	0.213	0.213	0.211	0.211
Indep. variable mean	0.400	0.400	0.091	0.091	0.058	0.058	0.105	0.105
Indep. variable std. dev.	0.490	0.490	0.288	0.288	0.233	0.233	0.307	0.307

*Notes:* The table reports OLS estimates where the unit of observation is an individual. The “enslaved ancestor” indicator is one if the respondent reports having an ancestor who was enslaved at any point during the ancestor’s lifetime. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. State fixed effects refer to the respondent’s current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

during the Holocaust, indentured servitude, and forced reservation of Indigenous peoples. Thus, we are able to look at the effects of these other types of enslavement for other racial groups. Estimates of the effects of reporting ancestral enslavement for other racial groups and the full sample are reported in columns 3–8 of Table 7. We find that the effect of ancestral enslavement on zero-sum thinking is found for groups other than Black respondents and in the full sample as well.

Strikingly, the marginal effect of ancestral enslavement is larger for the non-Black groups than for Black respondents. Thus, the findings show an interesting pattern: Black Americans appear to have the highest levels of zero-sum thinking and a possible explanation for this is the history of enslavement experienced by this group. However, when we examine the effect of this factor, we find that the marginal effect of enslavement is highest for groups other than Black Americans. Although there are multiple explanations for this, one is that slavery led to pervasive racism and institutional biases such that all Black Americans have been affected by the United States’s history of enslavement – not just those whose ancestors were directly enslaved. Preliminary evidence for this hypothesis is found in the fact that Black Americans are more zero-sum than other racial groups even after controlling for having enslaved ancestors (see Appendix Table C15). We discuss further evidence supporting this interpretation below.

We probe the effects of different types of enslavement directly by including a question in

Table 8: Zero-Sum Thinking and Ancestral Enslavement, By Episode

	Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Enslavement of African descendants	0.0460*** (0.0071)					
Holocaust		0.0145** (0.0072)				
Indentured servants			0.0297*** (0.0085)			
Internment of Japanese-Americans				0.0695*** (0.0112)		
Native American enslavement					0.0462*** (0.0077)	
War prisoner						0.0103 (0.0089)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Observations	8,807	8,807	8,807	8,807	8,807	8,807
R <sup>2</sup>	0.124	0.119	0.120	0.124	0.123	0.119
Dependent variable mean	0.521	0.521	0.521	0.521	0.521	0.521
Dependent variable std. dev.	0.215	0.215	0.215	0.215	0.215	0.215
Indep. variable mean	0.161	0.110	0.084	0.048	0.101	0.072
Indep. variable std. dev.	0.368	0.313	0.277	0.214	0.301	0.258

*Notes:* The table reports OLS estimates where the unit of observation is an individual. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. State fixed effects refer to the respondent's current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

waves 5 and after, where we ask specifically whether the following six types or episodes of enslavement apply to the respondent's ancestors: African descendants, the Holocaust, indentured servants, internment of Japanese Americans during WWII, reservation of Indigenous Americans, and those taken as a prisoner of war. From the responses, we create indicators for each form of enslavement. Estimates of equation (3) with each form of enslavement as a determinant of zero-sum thinking (and controlling for race fixed effects) are reported in Table 8. We find all forms of enslavement lead to more zero-sum thinking. All are significant except for imprisonment during war. Thus, our findings show that enslavement, regardless of the type or the group being targeted, is significantly associated with more zero-sum thinking.

### *Indirect effects*

To probe more deeply into the lasting effects of slavery, we consider potential effects beyond the direct effect of descending from ancestors who were enslaved. Specifically, we measure the extent to which the counties where the respondent, their parents, and their grandparents grew up relied

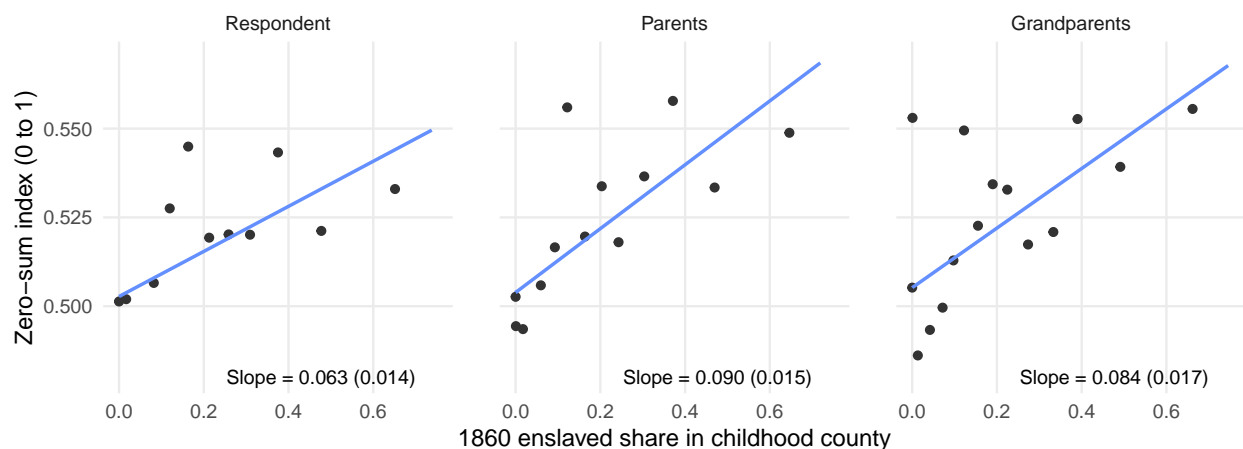


Figure 17: Relationships Between County Enslaved Share and Zero-Sum Thinking

Notes: Binscatter plots show the relationship between an index of the respondent’s zero-sum thinking and the 1860 enslaved share in (from the left column to the right) the county where the respondent grew up, the average across the counties where their parents grew up, and the average across the counties where their grandparents grew up.

on enslaved labor during the antebellum period, captured by the share of the total population that was enslaved in 1860.

Figure 17 shows the raw correlation between county enslaved share in 1860 (for respondents, their parents, and their grandparents) and the respondent’s zero-sum index. In all three cases, we observe a positive relationship: a higher enslaved share is associated with more zero-sum thinking.

Table 9 confirms these results, reporting estimates of the association between the 1860 enslaved share in the county where the respondent grew up and their degree of zero-sum thinking today. Column 1 reports estimates with only demographic controls and survey wave fixed effects. We then add race fixed effects (in column 2), state of residence fixed effects (in column 3), and an indicator for whether any of the respondent’s ancestors were themselves enslaved (in column 4). We find that growing up in a county that had a larger share of enslaved people tends to be associated with more zero-sum views today. All estimates are positive and significant. We also report similar estimates measuring the historical prevalence of enslavement in the counties where the respondent’s parents grew up (column 5–8) and their grandparents grew up (columns 9–12). We observe the same pattern for the respondent’s ancestors. The share of enslaved people in 1860 in the counties where the respondent’s parents and grandparents grew up tends to be positively correlated with zero-sum thinking today, even when controlling for whether one’s ancestors were

Table 9: Zero-Sum Thinking and Growing Up in Counties With Historical Enslavement

	(1)	(2)	(3)	(4)	Zero-sum index (0 to 1)							
					(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Respondent's county enslaved share	0.0471*** (0.0124)	0.0528*** (0.0135)	0.0353*** (0.0134)	0.0364*** (0.0134)								
Parents' counties enslaved share					0.0811*** (0.0121)	0.0923*** (0.0142)	0.0552*** (0.0145)	0.0544*** (0.0146)				
Grandparents' counties enslaved share									0.0821*** (0.0131)	0.0971*** (0.0140)	0.0509*** (0.0119)	0.0449*** (0.0111)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Race fixed effects			✓	✓			✓	✓			✓	✓
Enslaved ancestor				✓				✓				✓
Observations	18,310	18,310	18,310	18,303	16,295	16,295	16,295	16,289	12,852	12,852	12,852	12,851
R <sup>2</sup>	0.058	0.063	0.072	0.079	0.068	0.076	0.084	0.093	0.069	0.078	0.086	0.101
Num. clusters	2,087	2,087	2,087	2,087	2,235	2,235	2,235	2,234	2,060	2,060	2,060	2,060
Dependent variable mean	0.507	0.507	0.507	0.507	0.510	0.510	0.510	0.510	0.512	0.512	0.512	0.512
Dependent variable std. dev.	0.206	0.206	0.206	0.206	0.209	0.209	0.209	0.209	0.211	0.211	0.211	0.211
Indep. variable mean	0.066	0.066	0.066	0.066	0.067	0.067	0.067	0.067	0.076	0.076	0.076	0.076
Indep. variable std. dev.	0.147	0.147	0.147	0.147	0.145	0.145	0.145	0.145	0.153	0.153	0.153	0.153

Notes: The table reports OLS estimates where the unit of observation is an individual. “Enslaved share” refers to the proportion of individuals in a county who were enslaved according to the 1860 Census. Counties in non-slave states or in states that did not exist in 1860 are coded as having zero enslaved share. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. All variables are defined in Appendix B, with summary statistics in Tables B3 and B4. Standard errors are clustered by the respondent’s county, parents’ counties, or grandparents’ counties, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

enslaved.<sup>18</sup> Contrary to the results for historical immigration, the effects of living in areas with historical enslavement are still pronounced for the current generation, suggesting that place-based effects in those counties persist.

The results provide evidence that living in places where slavery was more prevalent is associated with zero-sum thinking. Did the history of enslavement also affect zero-sum values in parts of the United States that did not have slavery? Recent scholarship has documented how the values and beliefs of white individuals from the U.S. South were spread outside of the South during a large wave of white migration from 1900 to 1940 (Bazzi et al., 2023b). We therefore ask whether a respondent’s zero-sum thinking is influenced by the extent to which the county where they, their parents, or their grandparents grew up received migrants from the U.S. South in this period. We rely on variables constructed by Bazzi et al. (2023b) based on complete-count censuses, namely the share of a non-Southern county’s population that was born in the South and white (“Southern whites”).

Table 10 reports estimates of the relationship between the average share of the population that

<sup>18</sup>In the preceding analysis, we use averages of the county-level share of enslaved people for the respondent’s two parents or four grandparents. To check the sensitivity of our findings, we also examine the shares of enslaved people in the counties of the respondent’s father and paternal grandfather. As we report in Appendix Table C16, we obtain very similar estimates.



Table 10: Zero-Sum Thinking and Growing Up in Counties With In-Migration from the U.S. South

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county southern white share	0.0989 (0.0771)	0.1549** (0.0759)	0.1498** (0.0739)						
Parents' counties southern white share				0.2030*** (0.0618)	0.2560*** (0.0655)	0.2379*** (0.0629)			
Grandparents' counties southern white share							0.3026*** (0.0855)	0.3371*** (0.0767)	0.3080*** (0.0765)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	13,134	13,134	13,134	12,249	12,249	12,249	9,446	9,446	9,446
R <sup>2</sup>	0.060	0.068	0.080	0.068	0.079	0.089	0.073	0.088	0.098
Num. clusters	1,240	1,240	1,240	1,555	1,555	1,555	1,462	1,462	1,462
Dependent variable mean	0.500	0.500	0.500	0.500	0.500	0.500	0.502	0.502	0.502
Dependent variable std. dev.	0.205	0.205	0.205	0.208	0.208	0.208	0.212	0.212	0.212

Notes: The table reports OLS estimates where the unit of observation is an individual. "Southern white share" refers to the proportion of individuals in a non-Southern county who were born in the U.S. South. The sample omits all counties from the U.S. Confederate South. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. All variables are defined in Appendix B, with summary statistics in Tables B3 and B4. Standard errors are clustered by the respondent's county, parents' counties, or grandparents' counties, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

were Southern whites from 1900–1940 in the county where the respondent grew up and their degree of zero-sum thinking today (columns 1–3). Analogous relationships are also reported for the counties where the respondent's parents (column 4–6) and grandparents (columns 7–9) were raised. The estimates indicate that growing up (or having parents or grandparents who grew up) in a county that received more migrants from the South is associated with more zero-sum thinking today.

We also examine the role of Confederate culture across counties. To do so, we use the "Confederate Culture Index" constructed by Bazzi et al. (2023a), which combines information on whether, in the early 1900s, a county had Confederate memorials, a KKK chapter, a United Daughters of the Confederacy chapter, and recorded lynching of Black individuals.<sup>19</sup> Table 11 shows a positive link between Confederate culture and zero-sum thinking. These results are for all counties, but the estimates are similar if we restrict to non-Southern countries.

The results in Tables 10 and 11 are robust to controlling for (direct) enslaved ancestry and the share of Black Southern migrants (Appendix Table C17) and to only considering the father and grandfather's county (Appendix Table C18).

<sup>19</sup>The coverage period varies slightly by component. For the UDC chapter it is 1900-1920; for the KKK chapter it is 1915-1940; for lynchings it is 1882-1941; and for Confederate monuments, it is any mention until 2016.

Table 11: Zero-Sum Thinking and Growing Up in Counties With Confederate Culture

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county CCI (0 to 4)	0.0073*** (0.0014)	0.0075*** (0.0017)	0.0056*** (0.0018)						
Parents' counties CCI (0 to 4)				0.0114*** (0.0016)	0.0109*** (0.0018)	0.0081*** (0.0018)			
Grandparents' counties CCI (0 to 4)							0.0146*** (0.0023)	0.0145*** (0.0025)	0.0109*** (0.0025)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	18,168	18,168	18,168	16,130	16,130	16,130	12,685	12,685	12,685
R <sup>2</sup>	0.059	0.064	0.072	0.070	0.076	0.085	0.073	0.081	0.089
Num. clusters	2,051	2,051	2,051	2,200	2,200	2,200	2,023	2,023	2,023
Dependent variable mean	0.507	0.507	0.507	0.510	0.510	0.510	0.512	0.512	0.512
Dependent variable std. dev.	0.206	0.206	0.206	0.209	0.209	0.209	0.212	0.212	0.212

Notes: The table reports OLS estimates where the unit of observation is an individual. "CCI" is the Confederate Culture Index from Bazzi et al. (2023a); see text for more details. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. All variables are defined in Appendix B, with summary statistics in Tables B3 and B4. Standard errors are clustered by the respondent's county, parents' counties, or grandparents' counties, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

The existence of spillovers from the South to other parts of the country through migration and the spread of Confederate culture is important for understanding why the estimated correlation between enslavement and zero-sum thinking is smaller for Black individuals in our sample. Even if a Black respondent did not have ancestors who were directly enslaved – perhaps because their ancestors lived outside the South for many generations – they could have been influenced by the practices in the South through these spillover effects. These could be due to coercion and discrimination, arising in part from the migration of Southern whites and the spread of Confederate values, as well as through the interactions with recent Black migrants from the South, who may have also held perceptions that were more zero-sum.

## 5. Conclusion

We have examined the causes and consequences of a zero-sum mindset, defined as the extent to which one presumes that gains for one person or group must come at the expense of others. Our analysis relies on new comprehensive survey data from approximately 20,400 U.S. respondents, measuring the extent to which they view the world in zero-sum terms, their political views, policy preferences, and rich information about the characteristics of their ancestors.

The first part of the paper documents a strong and robust relationship between zero-sum

thinking and views about politics and policy. Individuals who view the world in more zero-sum terms tend to believe there is an important role for policies that redistribute income from the rich to the poor and that help disadvantaged groups (e.g., affirmative action for women and Black Americans). They also support more restrictive immigration policies. Zero-sum thinking is not mainly a partisan issue but can help explain otherwise puzzling within-party variation in policy views.

We also examined the historical and ancestral roots of zero-sum thinking. We find that three key factors in the history of the United States are important determinants of zero-sum thinking: economic intergenerational mobility, immigration, and enslavement. These three factors shape zero-sum thinking through the direct experience of an individual and their ancestors (e.g., whether they were immigrants or enslaved), and more indirectly (e.g., whether they lived in counties with a high share of immigrants or enslaved people).

Our findings highlight the role played by differences in perceptions about the basic nature of human interactions. They suggest that one's view on a wide range of social, political, and economic issues may be strongly influenced by the extent to which one perceives the gains in society as coming at the expense of others – i.e., zero-sum thinking. These results raise a host of questions that could guide future research.

Notably, given the fundamental nature of zero-sum thinking, could it also explain other economic, political, or social phenomena associated with it? Populism, conspiracy theories, or nativism all have at their roots in the belief that one group gains at the expense of others – whether it be a global elite, the “deep state,” or those from other countries. Given the current crises facing the world, there is also the natural question of how zero-sum thinking relates to views about climate change and global inequality.

Our analysis has shown that differences in zero-sum thinking are connected to historical forces in systematic ways. Individuals are more zero-sum today if they have ancestors who lived in an environment, or if they directly experienced, events that were more zero-sum. Understanding whether shorter-run experiences also affect zero-sum thinking is an interesting question for future research.

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## Online Appendix (Not for Publication)

### Appendix A. Finer Details of the Survey

#### *Survey questions about ancestors*

For each of six of the respondent's ancestors – mother, father, paternal grandfather, paternal grandmother, maternal grandfather, and maternal grandmother – we ask three sets of questions aimed at collecting information about their year of birth, residential history, and other relevant characteristics like education and occupation. Specifically, we ask the following questions:

Age questions:

- Is *<ancestor>* currently alive?
- *If alive:*
  - What is the age of *<ancestor>*?
  - What is the year of birth of *<ancestor>*?
- *If not alive:*
  - In what year did *<ancestor>* die?
  - What is the year of birth of *<ancestor>*?
  - How old was he/she when he/she died?

Location questions:

- Did *<ancestor>* primarily grow up (age 7-17) in the United States?
- *If ancestor didn't grow up in the U.S.:*
  - In what country did *<ancestor>* primarily grow up?
- *If ancestor grew up in the U.S.:*
  - In which state did *<ancestor>* primarily grow up?
  - In which town did *<ancestor>* primarily grow up? If he/she grew up in multiple places, select the location where he/she spent most of his time.

Other questions:

- Which category best describes *<ancestor's>* highest level of education?
- What was/is the occupation of *<ancestor>* as an adult?
- Which category best describes *<ancestor's>* occupation?

#### *Survey statistics*



Table A1: Attrition

Wave	Started survey	Completed
1	3,622	0.82
2	3,738	0.79
3	3,735	0.79
4	3,856	0.74
5	4,471	0.67
6	4,700	0.63
7	3,149	0.95
Overall	27,271	0.76

Notes: The table shows, by wave, the number of people who started the survey and the proportion who completed it.

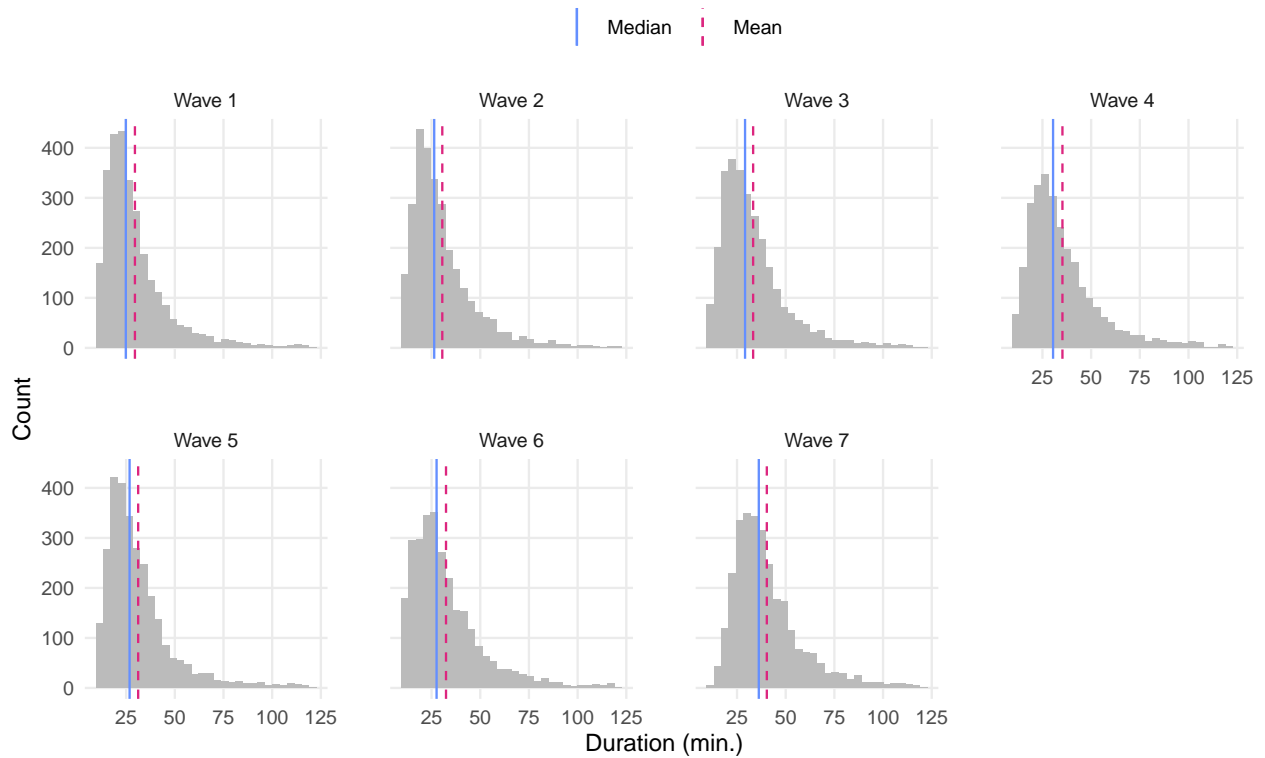


Figure A1: Survey Duration by Wave

Notes: The figures show the distribution of the time (in minutes) spent by respondents to complete the survey in each wave. The median is shown with a blue line and the mean with a dashed pink line. Responses above two hours – which is the 97th percentile of the distribution – are excluded from the figures.

Table A2: Predictors of Attrition

	Completed survey (1)
Constant	0.6695*** (0.0388)
Age 30-39	-0.0152** (0.0072)
Age 40-49	-0.0317*** (0.0074)
Age 50-59	-0.0440*** (0.0074)
Age 60+	-0.0286*** (0.0071)
Missing age	0.2810* (0.1584)
Male	0.0215*** (0.0044)
Other gender	-0.0071 (0.0323)
American Indian/Alaska Native	0.0317 (0.0236)
Asian/Asian American	0.0716*** (0.0107)
White	0.0449*** (0.0077)
Hispanic/Latino	0.0286*** (0.0096)
Native Hawaiian/Pacific Islander	-0.0036 (0.0410)
Other race	0.0042 (0.0156)
Missing race	-0.0445*** (0.0088)
\$15,000–\$24,999	0.0351*** (0.0111)
\$25,000–\$39,999	0.0498*** (0.0101)
\$40,000–\$54,999	0.0620*** (0.0103)
\$55,000–\$74,999	0.0605*** (0.0100)
\$75,000–\$99,999	0.0666*** (0.0102)
\$100,000–\$149,999	0.0780*** (0.0098)
\$150,000+	0.0899*** (0.0106)
Missing income	-0.1799 (0.1583)
Some high school	0.0121 (0.0406)
High school degree/GED	0.0707* (0.0377)
Some college	0.0881** (0.0377)
2-year college degree	0.1078*** (0.0380)
4-year college degree	0.1220*** (0.0377)
Master's degree, M.B.A.	0.1288*** (0.0379)
Ph.D., J.D., M.D.	0.1320*** (0.0389)
Reached education question but did not answer	0.0636* (0.0380)
Did not reach education question	0.0730* (0.0377)
Moderate Republican	0.0178** (0.0086)
Independent	0.0003 (0.0079)
Moderate Democrat	0.0106 (0.0084)
Strong Democrat	0.0354*** (0.0081)
Other party	-0.0497*** (0.0158)
Reached party question but did not answer	-0.0955 (0.1316)
Did not reach party question	-0.7311*** (0.0104)
Wave 2	-0.0147* (0.0076)
Wave 3	-0.0212*** (0.0079)
Wave 4	-0.0374*** (0.0083)
Wave 5	-0.0947*** (0.0082)
Wave 6	-0.1193*** (0.0083)
Wave 7	0.0919*** (0.0070)
Observations	27,271
R <sup>2</sup>	0.336
Dependent variable mean	0.758

*Notes:* The table reports OLS estimates where the unit of observation is an individual. The dependent variable is an indicator equal to one if the respondent completed the survey. The sample includes only respondents who consented to participate and were not screened out due to demographic quotas. The omitted categories are female for gender, Black for race, \$0–\$15K for household income, no high school for education, strong Republican for party affiliation, and wave 1 for survey wave. Robust standard errors are in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table A3: Balance Table for Respondents Missing Ancestors' Information

Proportion missing	Parents' location	Grandparents' location	Father's income	Grandfather's income
	0.008	0.074	0.143	0.338
Male	0.09 (0.027)	0.06 (0.000)	-0.06 (0.000)	-0.11 (0.000)
18–29 years old	0.26 (0.000)	0.08 (0.000)	0.06 (0.000)	0.02 (0.000)
30–39 years old	0.05 (0.102)	0.02 (0.027)	-0.02 (0.001)	-0.05 (0.000)
40–49 years old	-0.03 (0.308)	-0.01 (0.359)	-0.03 (0.000)	-0.03 (0.000)
50–59 years old	-0.08 (0.001)	-0.03 (0.004)	-0.01 (0.054)	0.00 (0.411)
60+ years old	-0.20 (0.000)	-0.06 (0.000)	0.01 (0.302)	0.06 (0.000)
\$0–\$14,999	0.21 (0.000)	0.10 (0.000)	0.12 (0.000)	0.06 (0.000)
\$15,000–\$24,999	0.06 (0.037)	0.04 (0.000)	0.06 (0.000)	0.03 (0.000)
\$25,000–\$39,999	-0.03 (0.156)	0.01 (0.209)	0.04 (0.000)	0.04 (0.000)
\$40,000–\$54,999	-0.05 (0.023)	0.00 (0.985)	0.00 (0.501)	0.01 (0.006)
\$55,000–\$74,999	-0.04 (0.073)	-0.02 (0.062)	-0.02 (0.002)	-0.00 (0.856)
\$75,000–\$99,999	-0.05 (0.012)	-0.03 (0.001)	-0.04 (0.000)	-0.03 (0.000)
\$100,000–\$149,999	-0.07 (0.011)	-0.05 (0.000)	-0.10 (0.000)	-0.06 (0.000)
\$150,000+	-0.02 (0.321)	-0.05 (0.000)	-0.07 (0.000)	-0.05 (0.000)
4-year college degree or more	-0.10 (0.009)	-0.15 (0.000)	-0.21 (0.000)	-0.14 (0.000)
High-school graduate or less	0.18 (0.000)	0.14 (0.000)	0.16 (0.000)	0.08 (0.000)
Employed	-0.09 (0.022)	-0.03 (0.012)	-0.16 (0.000)	-0.16 (0.000)
Unemployed	0.08 (0.006)	0.04 (0.000)	0.06 (0.000)	0.04 (0.000)
Self-employed	0.03 (0.182)	0.00 (0.908)	0.00 (0.519)	0.01 (0.145)
Married	-0.22 (0.000)	-0.09 (0.000)	-0.17 (0.000)	-0.11 (0.000)
White	-0.28 (0.000)	-0.08 (0.000)	-0.11 (0.000)	-0.02 (0.017)
Black/African American	0.07 (0.029)	0.07 (0.000)	0.09 (0.000)	0.02 (0.000)
Hispanic/Latino	0.09 (0.003)	0.01 (0.096)	0.01 (0.083)	-0.01 (0.082)
Asian/Asian American	0.02 (0.350)	-0.02 (0.003)	-0.01 (0.003)	-0.01 (0.104)
Democrat	-0.09 (0.026)	-0.01 (0.354)	-0.02 (0.030)	-0.02 (0.001)
Republican	-0.12 (0.000)	-0.08 (0.000)	-0.07 (0.000)	-0.04 (0.000)
Independent	0.21 (0.000)	0.09 (0.000)	0.09 (0.000)	0.07 (0.000)

Notes: The table shows the difference in means between respondents for whom the characteristic in the column header is missing and those for whom it is non-missing. *p*-values in parentheses. Respondents for whom we are able to match at least one parent location to a county are coded as “non-missing,” and likewise for grandparents.

## Appendix B. Data Construction and Description

Variable	Description	Source
<i>Zero-sum index</i>	First principal component of agreement with the following statements: "If an ethnic group becomes richer, this comes at the expense of other groups"; "In international trade, if one country makes more money, then the other makes less"; "If one income class becomes wealthier, it is at the expense of others"; "If non-U.S. citizens do better economically, this is at the expense of citizens". Variable is normalized to be between 0 and 1.	Survey
<i>Pro-redistribution index</i>	First principal component of agreement with the following statements: "Government should equalize outcomes"; "Government should equalize opportunity"; "Support for universal healthcare"; "Government should spend on income support for poor"; "Rich pay too little tax minus poor pay too little tax"; "Disagree with allowing wealth accumulation". Variable is standardized to correspond to a z-score.	Survey
<i>Anti-immigration index</i>	First principal component of agreement with the following statements: "Being born in the U.S. is important for being American"; "Disagree with increasing immigration". Variable is standardized to correspond to a z-score.	Survey
<i>Race attitudes index</i>	First principal component of agreement with the following statements: "Slavery makes it hard for Blacks to escape poverty"; "Racism is a problem in the U.S." Variable is standardized to correspond to a z-score.	Survey
<i>Gender attitudes index</i>	First principal component capturing agreement with the following statements: "Women in the U.S. experience discrimination"; "Women should be given hiring preference". Variable is standardized to correspond to a z-score.	Survey
<i>Luck more important than effort</i>	First principal component of agreement with the following statements: "In the US everybody can be economically successful"; "Hard work and effort have paid off"; "Disagree with success in life is outside one's control". Variable is standardized to correspond to a z-score.	Survey
<i>Perceived mobility</i>	First principal component of questions about the respondent's perception of the probability that in the U.S. a poor child can move to the 1st, 2nd, 3rd, 4th, and 5th quintile of the income distribution. Variable is standardized to correspond to a z-score.	Survey
<i>Universalist morals</i>	First principal component capturing willingness to give money to a non-US person or a non-member of an organization. Variable is standardized to correspond to a z-score.	Survey (waves 5-7)
<i>Tradition is important</i>	Measures agreement on a 10-point scale with the statement that "It is important to follow the traditions and customs that are passed down by one's community or family over time" relative to the opposite statement. Variable is standardized to correspond to a z-score.	Survey (waves 5-7)
<i>Generalized trust</i>	Captures agreement with the statement "Would you say that most people can be trusted?" Variable is standardized to correspond to a z-score.	Survey (waves 5-7)
<i>Zero-sum thinking (WVS)</i>	Captures agreement, on a 10-point scale, with the statement "People can only get rich at the expense of others" as opposed to "Wealth can grow so that there's enough for everyone." Variable is normalized to be between 0 and 1.	WVS (var. E041, waves 2, 3, 5, 6) and survey (waves 5-7)

Variable	Description	Source
<i>Political beliefs (WVS)</i>	Captures agreement, on a 10-point scale, with the statement “In political matters, people talk of the left and the right. How would you place your views on this scale, generally speaking?” Variable is normalized to be between 0 and 1.	WVS (var. E033)
<i>Incomes should be more equal (WVS)</i>	Captures agreement, on a 10-point scale, with the statement “Income should be more equal” as opposed to “There should be greater incentives for individual effort” Variable is normalized to be between 0 and 1.	WVS (var. E035, waves 2-7)
<i>Government should take more responsibility to provide for everyone (WVS)</i>	Captures agreement, on a 10-point scale, with the statement “Government should take more responsibility to ensure that everyone is provided for” as opposed to “People should take more responsibility to provide for themselves.” Variable is normalized to be between 0 and 1.	WVS (var. E037, waves 2-7)
<i>Government should prohibit immigrants (WVS)</i>	Measures anti-immigrant sentiment with the question: “How about people from other countries coming here to work. Which one of the following do you think the government should do.” Respondents could choose: (1) Let anyone come who wants to; (2) Let people come as long as there are jobs available; (3) Place strict limits on the number of foreigners who can come here; (4) Prohibit people coming here from other countries. This variable is rescaled so that it is increasing in preference for immigration restrictions.	WVS (var. E143, waves 3-5)
<i>Luck more important than effort (WVS)</i>	Captures agreement, on a 10-point scale, with the statement “Everything in life is determined by fate” as opposed to “People shape their fate themselves.”	WVS (var. F198, wave 5)
<i>Perceived mobility (WVS)</i>	Measures perceived economic mobility with the question: “In your opinion, do most poor people in this country have a chance of escaping from poverty, or is there very little of chance escaping?” Respondents could choose “They have a chance” or “They have very little chance.”	WVS (var. F198, wave 3)
<i>Universalist morals (WVS)</i>	Difference between ingroup and outgroup trust. Ingroup trust is the average of how much the respondent trusts their family (var. D001, wave 2), neighborhood (var. G007_18, wave 2), and people they know personally (var. G007_33_B, waves 5-7). Outgroup trust is the average of how much the respondent trusts people they meet for the first time (var. G007_34_B, waves 5-7), people of another religion (G007_35_B, waves 5-7), and people of another nationality (var. G007_36_B, waves 5-7). All the component trust variables are scaled between 0 and 1. If one component of the average is missing for a particular observation, it is not included in the average.	WVS
<i>Tradition is important (WVS)</i>	Measures the importance of tradition by asking respondents whether a person with the following description is “very much like you, like you, somewhat like you, not like you, or not at all like you”: “Tradition is important to this person; to follow the customs handed down by one’s religion or family.”	WVS (var. A198, waves 5-6)
<i>Generalized trust (WVS)</i>	Captures agreement with the statement “Would you say that most people can be trusted?”	WVS (var. A165)
<i>Per-capita GDP growth</i>	Per-capita GDP growth during the first 20 years of an individual’s life in the country where they lived at the time of the survey.	World Bank
<i>Percentage change in bottom 50% income</i>	Percentage change in the pre-tax income growth of the bottom 50% income of the U.S. population for the first 20 years of an individual’s life, averaged over five-year bins.	World Inequality Database

Variable	Description	Source
<i>Parents to respondent mobility</i>	Difference between the current relative income of the respondent in adulthood and the relative income of the respondent's parents in adulthood (when the respondent was growing up). Relative income takes five values – (1) Far below average; (2) A little below average; (3) Average; (4) A little above average; (5) Far above average – and is defined relative to other families in the country at the time. An answer of “I don't know” is coded as missing.	Survey
<i>Grandparents to respondent mobility</i>	Difference between the current relative income of the respondent in adulthood and the relative income of the respondent's paternal grandparents in adulthood (when the respondent's father was growing up).	Survey
<i>Great-grandparents to respondent mobility</i>	Difference between the current relative income of the respondent in adulthood and the relative income of the respondent's paternal great-grandparents in adulthood (when the respondent's paternal grandfather was growing up).	Survey
<i>Grandparents to parents mobility</i>	Difference between the relative income of the respondent's parents in adulthood (when the respondent was growing up) and the relative income of the respondent's paternal grandparents in adulthood (when the respondent's father was growing up).	Survey
<i>Great-grandparents to grandparents mobility</i>	Difference between the relative income of the respondent's paternal grandparents in adulthood (when the respondent's father was growing up) and the relative income of the respondent's paternal great-grandparents in adulthood (when the respondent's paternal grandfather was growing up).	Survey
<i>Respondent immigrated</i>	Indicator variable that equals 1 if the respondent was born outside the U.S.	Survey
<i>Parent immigrated</i>	Indicator variable that equals 1 if the respondent was born in the U.S. and at least one of their parents was born outside of the U.S. If the respondent does not know whether either of their parents was born in the U.S. this variable is coded as missing.	Survey
<i>Grandparent immigrated</i>	Indicator variable that equals 1 if the respondent was born in the U.S. and either (1) their father was born in the U.S. and at least one paternal grandparent was born outside of the U.S., or (2) their mother was born in the U.S. and at least one maternal grandparent was born outside of the U.S. If the respondent indicates that they do not know where any of their four grandparents were born, this variable is coded as missing.	Survey
<i>Enslaved ancestor</i>	Indicator variable that equals 1 if the respondent reports having an ancestor who was enslaved at any point during the ancestor's lifetime.	Survey
<i>Respondent's county foreign share</i>	Proportion of individuals who were born outside of the U.S. over the 1860 to 1920 period in the county where the respondent grew up between ages 10 to 19.	U.S. Census
<i>Parents' counties foreign share</i>	Proportion of individuals who were born outside of the U.S. over the 1860 to 1920 period, averaged over the counties in which the respondent's parents grew up between ages 7 and 17.	U.S. Census
<i>Grandparents' counties foreign share</i>	Proportion of individuals who were born outside of the U.S. over the 1860 to 1920 averaged over the counties in which the respondent's grandparents grew up between ages 7 and 17.	U.S. Census
<i>Respondent's county enslaved share</i>	Proportion of individuals who were enslaved in 1860 in the county where the respondent grew up between ages 10 to 19. Counties in non-slave states or in states that did not exist in 1860 are coded as having zero enslaved share.	U.S. 1860 Census

Variable	Description	Source
<i>Parents' counties enslaved share</i>	Proportion of individuals who were enslaved in 1860, averaged over the counties in which the respondent's parents grew up between ages 7 and 17. Counties in non-slave states or in states that did not exist in 1860 are coded as having zero enslaved share.	U.S. 1860 Census
<i>Grandparents' counties enslaved share</i>	Proportion of individuals who were enslaved in 1860, averaged over the counties in which the respondent's grandparents grew up between ages 7 and 17. Counties in non-slave states or in states that did not exist in 1860 are coded as having zero enslaved share.	U.S. 1860 Census
<i>Respondent's county southern white/Black share, 1900-1940</i>	Proportion of white/Black individuals born in the U.S. South over the 1900 to 1940 period. Defined only for non-Southern counties and measured for the county where the respondent grew up between ages 10 and 19.	Bazzi et al. (2020)
<i>Parents' counties southern white/Black share, 1900-1940</i>	Proportion of white/Black individuals born in the U.S. South over the 1900 to 1940 period. Defined only for non-Southern counties and averaged over the counties in which the respondent's parents grew up between ages 7 and 17.	Bazzi et al. (2020)
<i>Grandparents' counties southern white/Black share, 1900-1940</i>	Proportion of white/Black individuals born in the U.S. South over the 1900 to 1940 period. Defined only for non-Southern counties and averaged over the counties in which the respondent's grandparents grew up between ages 7 and 17.	Bazzi et al. (2020)
<i>Respondent's county Confederate Culture Index (0-4)</i>	Index that combines information on whether a county had Confederate memorials, a KKK chapter, a United Daughters of the Confederacy chapter, and recorded lynching of Black individuals. Measured for the county in which the respondent grew up between ages 10 and 19.	Bazzi et al. (2023)
<i>Parents' counties Confederate Culture Index (0-4)</i>	Index that combines information on whether a county had Confederate memorials, a KKK chapter, a United Daughters of the Confederacy chapter, and recorded lynching of Black individuals. The variable is averaged over the counties where the respondent's parents grew up between ages 7 and 17.	Bazzi et al. (2023)
<i>Grandparents' counties Confederate Culture Index (0-4)</i>	Index that combines information on whether a county had Confederate memorials, a KKK chapter, a United Daughters of the Confederacy chapter, and recorded lynching of Black individuals. The variable is averaged over the counties where the respondent's grandparents grew up between ages 7 and 17.	Bazzi et al. (2023)

*Notes:* For all variables that refer to the “parents’ counties,” the variable is averaged over the respondent’s mother and father when nonmissing; if one parents’ location is missing, then the variable refers to the nonmissing parent alone; if both parents’ locations are missing, then the variable is coded as missing. Likewise, for all variables that refer to the “grandparents’ counties,” the variable is averaged over the respondent’s four grandparents when nonmissing; if one or more grandparents’ locations are missing, then the variable refers to the nonmissing grandparents only; if all grandparents’ locations are missing, then the variable is coded as missing.

Table B2: PCA Factor Loadings for Index Variables

Index	Variable	1st PC	2nd PC
Anti-immigration index	Important for being American: Born in U.S.	0.71	-0.71
	Disagree with increasing immigration	0.71	0.71
Luck more important than effort	In the U.S. everybody can be economically successful	0.66	-0.23
	Hard work and effort have paid off	0.65	-0.29
	Disagree with success in life is outside one's control	0.37	0.93
Perceived mobility	Poor family to 1st quintile	0.55	0.46
	Poor family to 2nd quintile	0.35	-0.33
	Poor family to 3rd quintile	-0.11	-0.74
	Poor family to 4th quintile	-0.52	0.05
	Poor family to 5th quintile	-0.54	0.36
Race attitudes index	Racism is a problem	0.71	0.71
	Slavery makes it hard for Blacks to escape poverty	0.71	-0.71
Pro-redistribution index	Gov. should equalize outcome	0.45	0.32
	Gov. should equalize opportunity	0.45	0.30
	Universal healthcare	0.43	0.16
	Gov. should spend on income support for poor	0.42	0.16
	Rich pay too little tax minus poor pay too little	0.34	-0.63
	Disagree with allowing wealth accumulation	0.34	-0.60
Universalist morals	Money to non-U.S. person	0.50	0.50
	Money to non-member of organization	0.50	-0.50
	Money to member of organization	-0.50	0.50
	Money to U.S. person	-0.50	-0.50
Gender attitudes index	Women should be given hiring preference	0.71	0.71
	Women experience discrimination	0.71	-0.71
Zero-sum index	If an ethnic group becomes richer, this comes at the expense of other groups	0.55	-0.26
	In international trade, if one country makes more money, then the other makes less	0.52	-0.03
	If one income class becomes wealthier, it is at the expense of others	0.52	-0.38
	If non-U.S. citizens do better economically, this is at the expense of citizens	0.40	0.89

*Notes:* The table shows factor loadings for the first two principal components for each of the component questions for the zero-sum index, policy view indices, and indices of other fundamental attitudes.



Table B3: Summary Statistics for Survey Variables

Variable	Mean	Std. dev.	Observations
Zero-sum index	0.51	0.21	20,282
<i>Pro-redistribution index</i>	<i>0.00</i>	<i>1.00</i>	<i>20,296</i>
Rich pay too little tax minus poor pay too little	0.89	1.05	20,320
Universal healthcare	4.43	1.65	20,342
Disagree with allowing wealth accumulation	2.58	1.20	20,350
Gov. should spend on income support for poor	3.64	1.13	20,345
Gov. should equalize outcome	4.38	1.84	20,336
Gov. should equalize opportunity	4.90	1.76	20,341
<i>Anti-immigration index</i>	<i>0.00</i>	<i>1.00</i>	<i>20,335</i>
Disagree with increasing immigration	2.93	1.17	20,342
Important for being American: Born in U.S.	2.71	1.04	20,341
<i>Race attitudes index</i>	<i>0.00</i>	<i>1.00</i>	<i>20,304</i>
Racism is a problem	3.48	1.20	20,336
Slavery makes it hard for Blacks to escape poverty	3.23	1.32	20,316
<i>Gender attitudes index</i>	<i>0.00</i>	<i>1.00</i>	<i>20,337</i>
Women should be given hiring preference	3.13	1.12	20,345
Women experience discrimination	2.74	0.87	20,340
<i>Luck more important than effort</i>	<i>0.00</i>	<i>1.00</i>	<i>20,300</i>
In the U.S. everybody can be economically successful	3.55	1.16	20,348
Hard work and effort have paid off	2.22	0.62	20,305
Disagree with success in life is outside one's control	3.22	1.12	20,351
<i>Perceived mobility</i>	<i>0.00</i>	<i>1.00</i>	<i>20,356</i>
Poor family to 1st quintile	29.16	23.13	20,345
Poor family to 2nd quintile	21.39	13.39	20,353
Poor family to 3rd quintile	23.68	17.87	20,355
Poor family to 4th quintile	12.29	10.73	20,354
Poor family to 5th quintile	13.41	18.33	20,353
<i>Universalist morals</i>	<i>0.00</i>	<i>1.00</i>	<i>8,823</i>
Money to member of organization	59.52	27.17	8,788
Money to non-member of organization	40.19	27.11	8,803
Money to U.S. person	60.33	26.52	8,794
Money to non-U.S. person	39.45	26.48	8,808
<i>Tradition is important</i>	<i>0.00</i>	<i>1.00</i>	<i>8,815</i>
<i>Generalized trust</i>	<i>0.00</i>	<i>1.00</i>	<i>8,439</i>
Zero-sum thinking (WVS)	6.50	2.69	8,814
Respondent immigrated	0.07	0.26	20,356
Parent immigrated	0.12	0.33	20,194
Grandparent immigrated	0.17	0.37	18,779
Enslaved ancestor	0.11	0.31	20,345
Parents to respondent mobility	0.21	1.27	19,582
Grandparents to respondent mobility	0.53	1.37	17,342
Great-grandparents to respondent mobility	0.64	1.38	13,396
Grandparents to parents mobility	0.31	1.13	17,308
Great-grandparents to grandparents mobility	0.12	0.89	13,290

Notes: The table shows summary statistics for the main survey variables. Italics denote variables standardized to have mean zero and standard deviation one.

Table B4: Summary Statistics for County-Level Variables

Variable	Mean	Std. dev.	Observations
Respondent's county enslaved share	0.07	0.15	18,372
Parents' counties enslaved share	0.07	0.15	16,343
Grandparents' counties enslaved share	0.08	0.15	12,893
Respondent's county foreign share	0.17	0.12	17,575
Parents' counties foreign share	0.18	0.12	15,847
Grandparents' counties foreign share	0.16	0.12	12,524
Respondent's county southern white share	0.03	0.03	13,173
Parents' counties southern white share	0.02	0.03	12,285
Grandparents' counties southern white share	0.02	0.03	9,475
Respondent's county Confederate Culture Index	2.24	1.23	18,229
Parents' counties Confederate Culture Index	2.16	1.16	16,178
Grandparents' counties Confederate Culture Index	2.11	1.15	12,726

*Notes:* The table shows summary statistics for the county-level variables assigned to each respondent according to the locations where they, their parents, and their grandparents grew up.

## Appendix C. Appendix Tables and Figures

Table C1: Correlations Among Zero-Sum Questions

	Citizenship (+)	Trade (+)	Income (+)	Wealth of rich taken from others (+)	Wealth can grow so there's enough (-)
Ethnic (+)	0.33	0.54	0.57	0.25	-0.17
Citizenship (+)		0.37	0.29	-0.07	-0.01
Trade (+)			0.47	0.15	-0.12
Income (+)				0.38	-0.23
Wealth of rich taken from others (+)					-0.24

Notes: (+) and (-) indicate whether the question is increasing or decreasing in zero-sum views.

Table C2: Correlations Among Location Questions

	Father	Mother	Paternal grandfather	Paternal grandmother	Maternal grandfather	Maternal grandmother
Respondent	0.38	0.40	0.20	0.20	0.19	0.21
Father		0.58	0.58	0.56	0.44	0.44
Mother			0.44	0.45	0.54	0.56
Paternal grandfather				0.76	0.60	0.57
Paternal grandmother					0.61	0.60
Maternal grandfather						0.77

Notes: The table shows the proportion of respondents for whom the indicated own or ancestral location variables (at the county level) are the same. For each cell, only respondents for whom both of that cell's location variables are non-missing are included.

Table C3: PCA Factor Loadings for Zero-Sum Indices

	Zero-sum index	Minus ethnic	Minus citizenship	Minus income
Ethnic	0.55	-	0.60	0.60
Citizenship	0.40	0.52	-	0.51
Trade	0.52	0.62	0.56	0.61
Income	0.52	0.59	0.57	-

Notes: The table shows factor loadings for the first principal component for the baseline zero-sum index and the indices that remove questions that may be mechanically correlated with policy views.

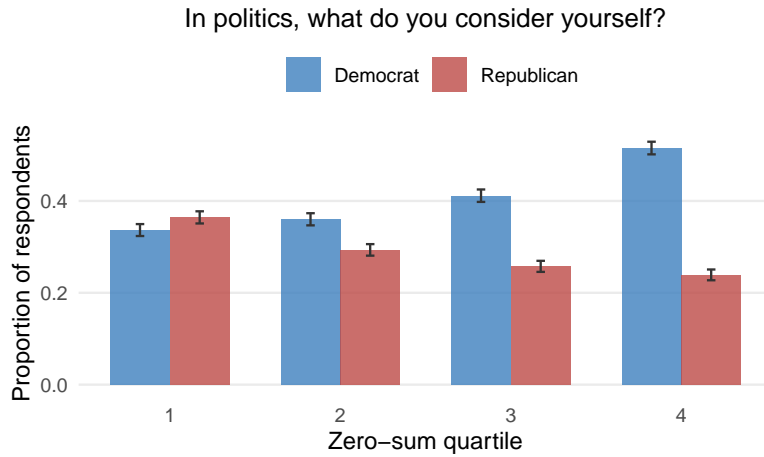


Figure C1: Zero-Sum Thinking and Political Affiliation

Notes: Bars show the proportion of respondents within the quartile of the zero-sum index who considered themselves “Strong Republican” or “Moderate Republican”, or “Strong Democrat” or “Moderate Democrat.” Those who considered themselves “Independent” are not shown.

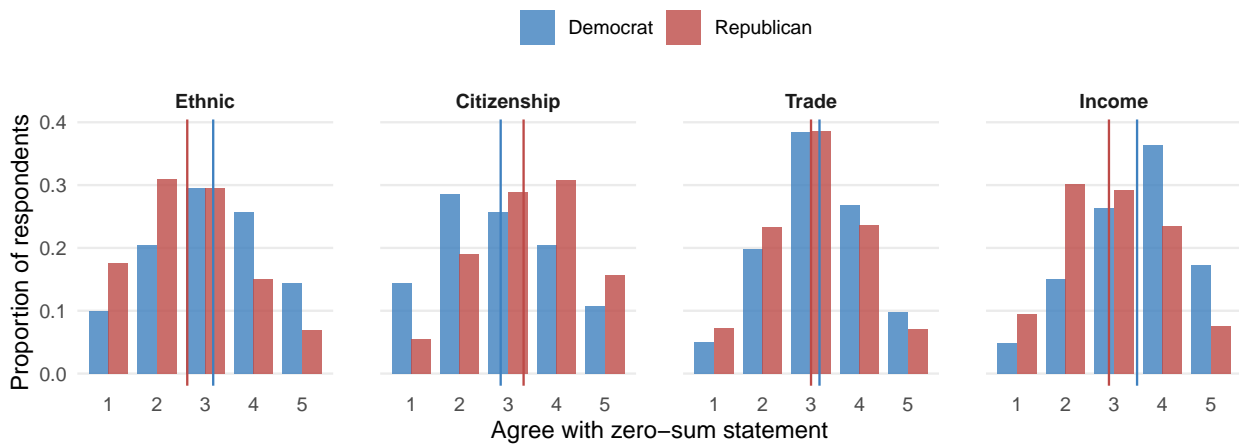
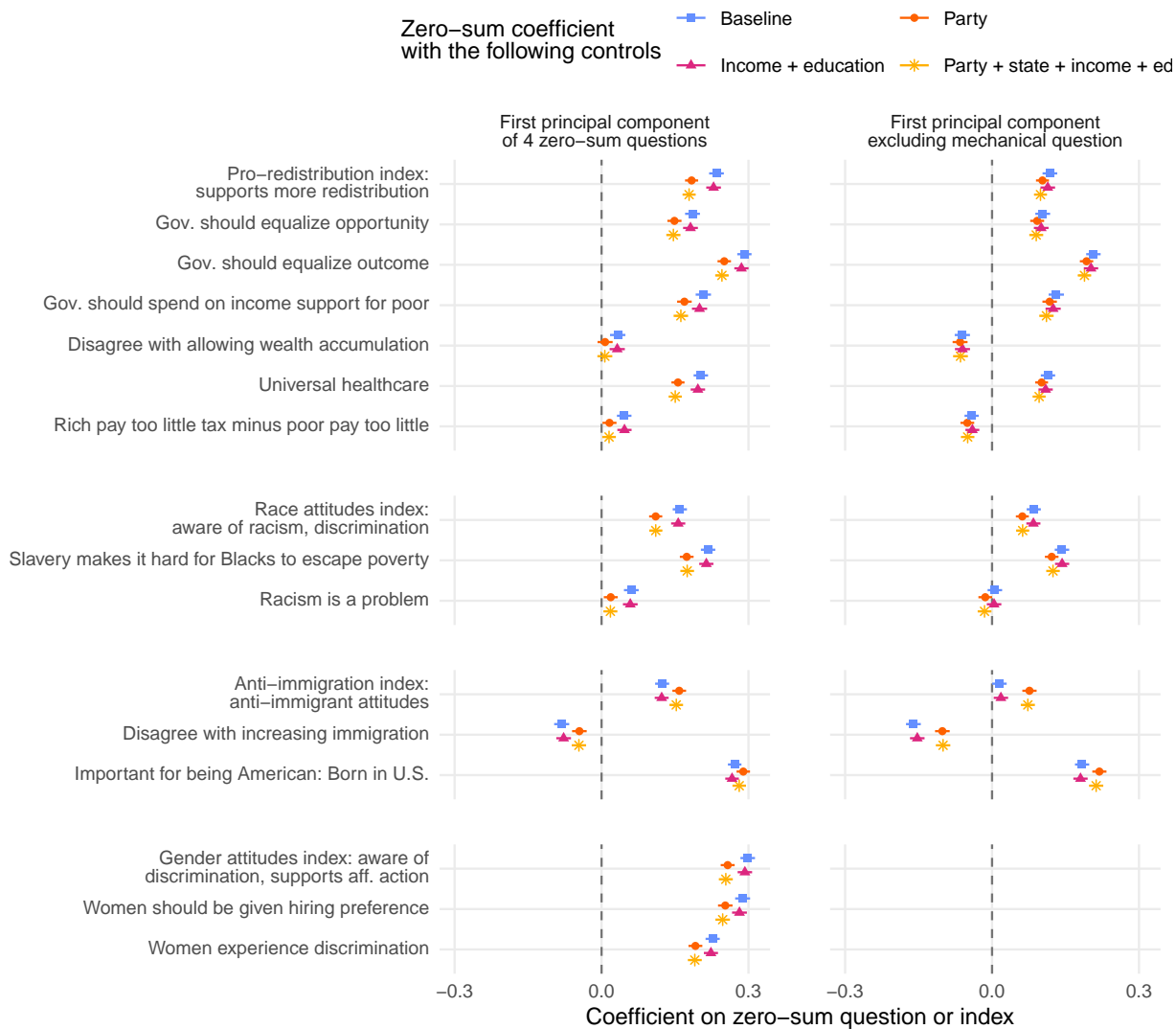


Figure C2: Responses to Zero-Sum Questions by Party

Notes: Vertical lines show the mean response for each party. “Republican” includes respondents who considered themselves “Strong Republican” or “Moderate Republican”, and “Democrat” includes respondents who considered themselves “Strong Democrat” or “Moderate Democrat.” Those who considered themselves “Independent” are not shown.



**Figure C3: Zero-Sum Thinking and Policy Views, By Domain**

*Notes:* Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, as well as whether the respondent was born in the United States, wave fixed effects, and race fixed effects. The four estimates for each outcome in each column correspond to the baseline specification, as well as specifications that add (1) income and education, (2) party, and (3) income, education, party, and current state fixed effects. Outcomes and regressors are standardized to have mean zero and standard deviation one.

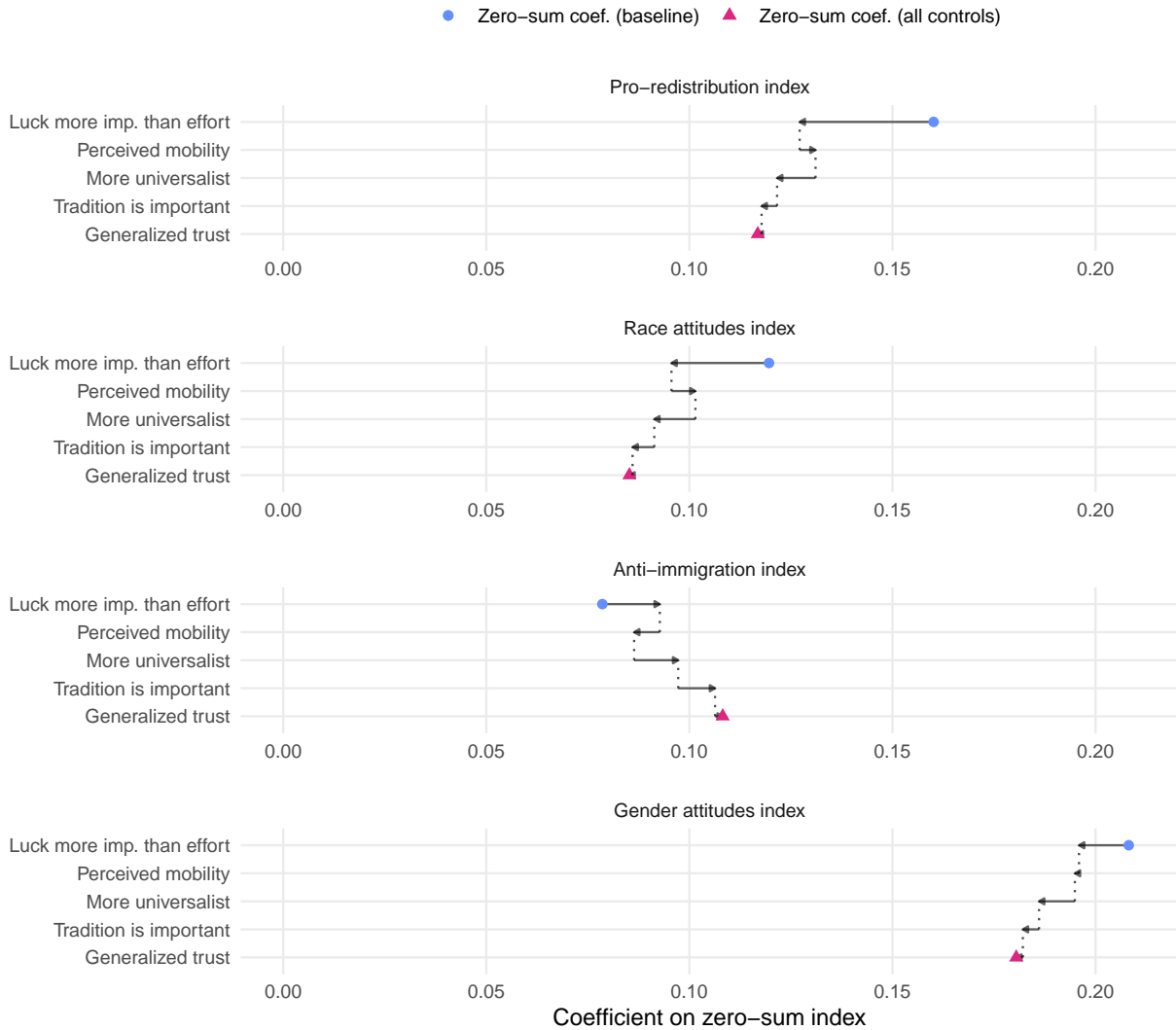


Figure C4: Gelbach Decompositions of Policy Views

Notes: The figure reports Gelbach decompositions (Gelbach, 2016) of the gap between (1) the coefficient on zero-sum thinking in a regression of each of the redistribution index, race attitudes index, anti-immigration index, and gender attitudes index on the zero-sum index with baseline demographic controls only (the “restricted” regression) and (2) the coefficient on zero-sum thinking in the same regression, but with additional controls for other fundamental attitudes (the “full” regression). These additional controls, corresponding to the core beliefs in Figure 7, include whether luck is more important than effort, perceived mobility, moral universalism, whether tradition is important, and generalized trust.

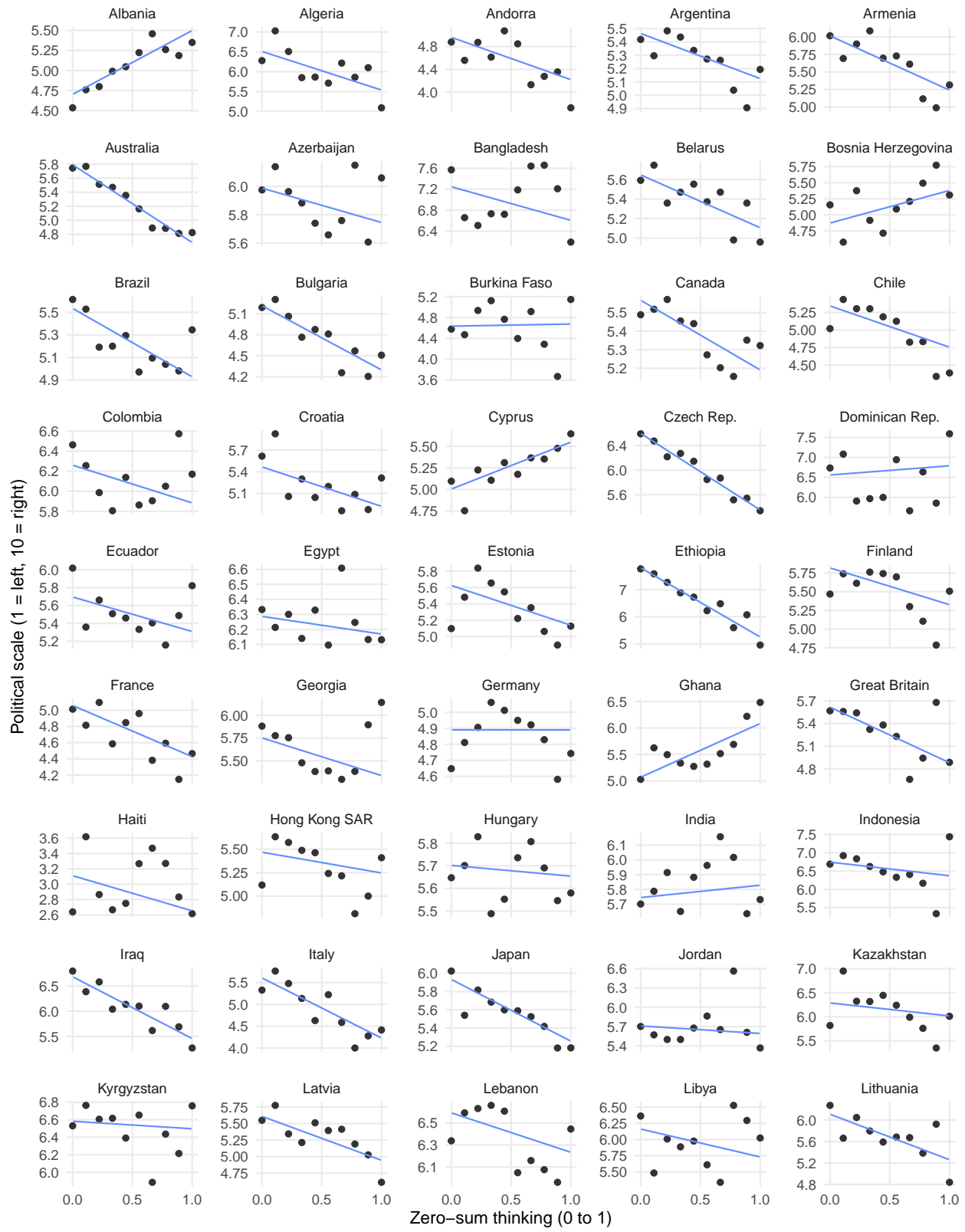


Figure C5: Zero-Sum Thinking and Political Affiliation Within Countries Across the World

Notes: The figure reports the relationship, by country, between an individual's zero-sum thinking and their political orientation, conditional on survey wave fixed effects. Data are from the World Values Survey.

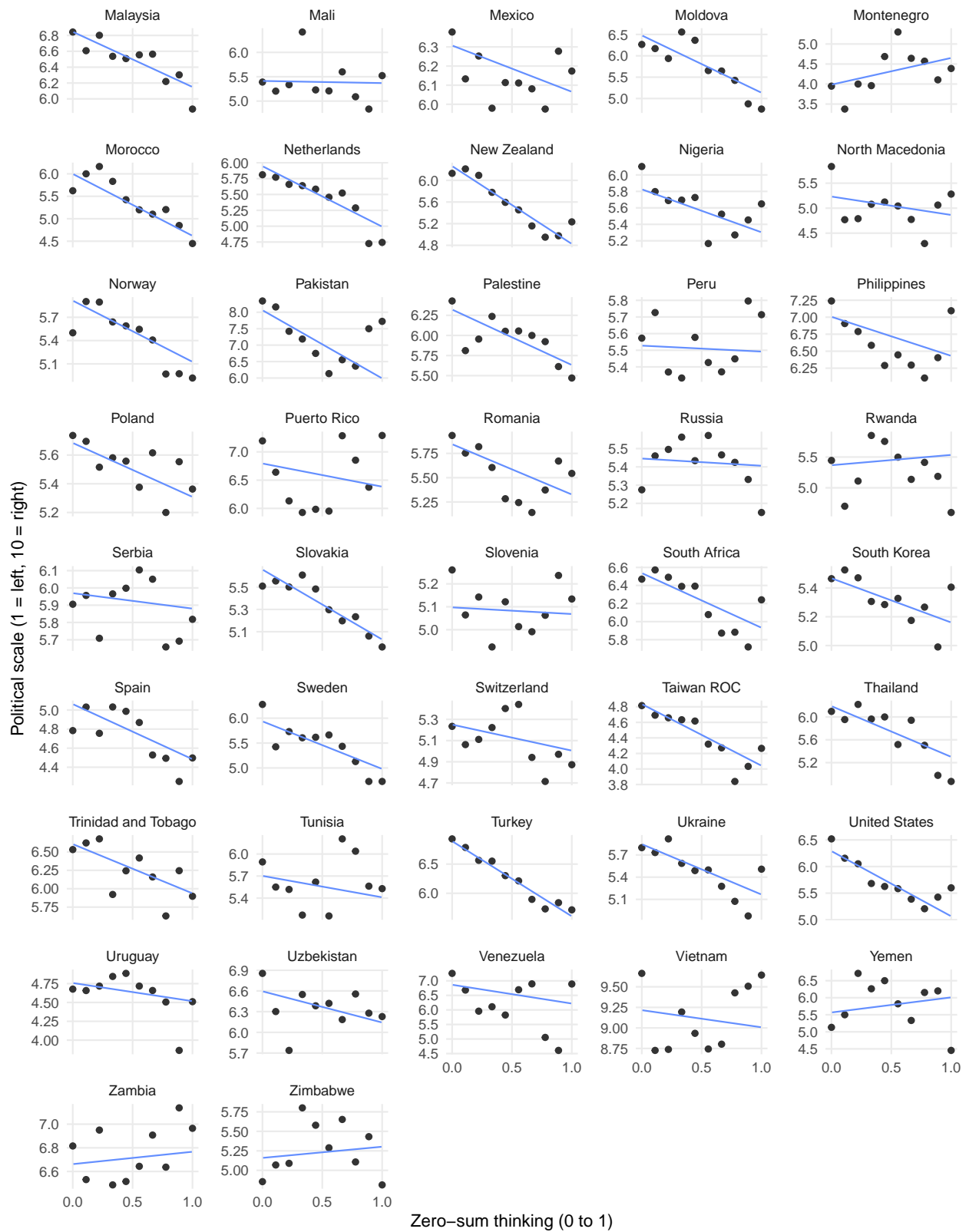


Figure C6: Zero-Sum Thinking and Political Affiliation Within Countries Across the World (cont.)

Notes: The figure reports the relationship, by country, between an individual's zero-sum thinking and their political orientation, conditional on survey wave fixed effects. Data are from the World Values Survey.



Table C4: Multivariate Regression of Zero-Sum Thinking on Individual Characteristics

	Zero-sum index (0 to 1)			
	(1)	(2)	(3)	(4)
Age 30-39	0.019*** (0.005)	0.022*** (0.005)	0.020*** (0.005)	0.019*** (0.005)
Age 40-49	0.008 (0.005)	0.009* (0.005)	0.008 (0.005)	0.008 (0.005)
Age 50-59	-0.056*** (0.005)	-0.052*** (0.005)	-0.051*** (0.005)	-0.051*** (0.005)
Age 60+	-0.085*** (0.004)	-0.083*** (0.004)	-0.085*** (0.004)	-0.084*** (0.004)
Male	0.030*** (0.003)	0.029*** (0.003)	0.030*** (0.003)	0.030*** (0.003)
Other gender	0.044** (0.019)	0.038** (0.019)	0.033* (0.019)	0.033* (0.019)
African American/Black	0.067*** (0.005)	0.062*** (0.005)	0.048*** (0.005)	0.045*** (0.005)
American Indian/Alaska Native	-0.006 (0.015)	-0.010 (0.015)	-0.006 (0.015)	-0.006 (0.015)
Asian/Asian American	-0.019*** (0.007)	-0.016** (0.007)	-0.017** (0.007)	-0.017** (0.007)
Hispanic/Latino	0.006 (0.005)	0.005 (0.005)	-0.0006 (0.005)	-0.003 (0.005)
Native Hawaiian/Pacific Islander	0.003 (0.026)	0.003 (0.026)	-0.002 (0.027)	0.004 (0.028)
Other race	-0.004 (0.009)	-0.008 (0.009)	-0.007 (0.009)	-0.007 (0.009)
Born in U.S.	0.041*** (0.006)	0.041*** (0.006)	0.036*** (0.006)	0.037*** (0.006)
\$15,000–\$24,999		0.0006 (0.006)	-0.0010 (0.006)	-0.001 (0.006)
\$25,000–\$39,999		-0.012** (0.006)	-0.013** (0.006)	-0.013** (0.006)
\$40,000–\$54,999		-0.022*** (0.006)	-0.022*** (0.006)	-0.022*** (0.006)
\$55,000–\$74,999		-0.031*** (0.006)	-0.031*** (0.006)	-0.031*** (0.006)
\$75,000–\$99,999		-0.027*** (0.006)	-0.026*** (0.006)	-0.026*** (0.006)
\$100,000–\$149,999		-0.028*** (0.006)	-0.028*** (0.006)	-0.028*** (0.006)
\$150,000+		-0.023*** (0.007)	-0.025*** (0.007)	-0.026*** (0.007)
Some high school		0.033 (0.027)	0.029 (0.027)	0.032 (0.027)
High school degree/GED		0.035 (0.026)	0.032 (0.026)	0.033 (0.026)
Some college		0.015 (0.026)	0.009 (0.026)	0.011 (0.026)
2-year college degree		0.021 (0.026)	0.015 (0.026)	0.016 (0.026)
4-year college degree		0.006 (0.026)	-0.003 (0.026)	-0.001 (0.026)
Master’s degree, M.B.A.		0.040 (0.026)	0.026 (0.026)	0.027 (0.026)
Ph.D., J.D., M.D.		0.063** (0.027)	0.046* (0.027)	0.046* (0.027)
Strong Republican			0.005 (0.005)	0.004 (0.005)
Moderate Republican			-0.003 (0.004)	-0.004 (0.004)
Moderate Democrat			0.027*** (0.004)	0.027*** (0.004)
Strong Democrat			0.061*** (0.004)	0.059*** (0.004)
Other party			-0.006 (0.008)	-0.006 (0.008)
Wave fixed effects	✓	✓	✓	✓
State fixed effects				✓
Observations	20,282	20,280	20,275	20,275
R <sup>2</sup>	0.079	0.087	0.099	0.103
Dependent variable mean	0.514	0.514	0.514	0.514
Dependent variable std. dev.	0.211	0.211	0.211	0.211

Notes: The table reports OLS estimates where the unit of observation is an individual. The omitted categories are 18-29 for age, female for gender, European American/white for race, \$0–\$15,000 for household income, no high school for education, and Independent for party affiliation. Robust standard errors are in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C5: Zero-Sum Thinking and Political Affiliation Across the World

Country	Coefficient on left-right index	Num. of obs.	Mean of zero-sum index
<b>Full sample</b>	-0.008*** (0.001)	192,172	0.405
Albania	0.014*** (0.004)	889	0.468
Algeria	-0.022*** (0.006)	530	0.487
Andorra	-0.016*** (0.005)	907	0.431
Argentina	-0.010 (0.005)	2,932	0.391
Armenia	-0.014 (0.004)	2,150	0.376
Australia	-0.020*** (0.001)	4,492	0.430
Azerbaijan	-0.004 (0.006)	2,276	0.328
Bangladesh	-0.013*** (0.004)	1,053	0.337
Belarus	-0.013 (0.010)	3,569	0.378
Bosnia Herzegovina	0.009** (0.004)	1,096	0.505
Brazil	-0.007** (0.002)	4,938	0.281
Bulgaria	-0.016 (0.009)	1,548	0.495
Burkina Faso	0.001 (0.004)	1,073	0.562
Canada	-0.008 (0.005)	3,032	0.355
Chile	-0.011* (0.004)	3,475	0.342
Colombia	-0.006 (0.001)	3,489	0.302
Croatia	-0.013*** (0.005)	1,052	0.450
Cyprus	0.008 (0.004)	1,865	0.423
Czech Rep.	-0.024** (0.002)	1,905	0.488
Dominican Rep.	0.003 (0.006)	399	0.280
Ecuador	-0.005 (0.003)	1,137	0.314
Egypt	-0.002 (0.003)	4,235	0.303
Estonia	-0.010 (0.011)	2,016	0.420
Ethiopia	-0.041*** (0.003)	1,308	0.474
Finland	-0.007 (0.009)	1,736	0.412
France	-0.010** (0.004)	924	0.423
Georgia	-0.006 (0.004)	3,226	0.334
Germany	-0.000 (0.003)	5,449	0.427
Ghana	0.015 (0.012)	2,316	0.481
Great Britain	-0.015*** (0.005)	859	0.442
Haiti	-0.006** (0.003)	1,944	0.877
Hong Kong SAR	-0.004 (0.005)	975	0.322
Hungary	-0.001 (0.003)	1,392	0.545
India	0.001 (0.005)	6,933	0.522
Indonesia	-0.005 (0.003)	1,313	0.323
Iraq	-0.016*** (0.004)	960	0.405
Italy	-0.020*** (0.004)	721	0.376
Japan	-0.009** (0.002)	3,435	0.449
Jordan	-0.001 (0.006)	323	0.515
Kazakhstan	-0.005 (0.003)	1,500	0.403
Kyrgyzstan	-0.002 (0.004)	1,454	0.354
Latvia	-0.018*** (0.005)	927	0.291
Lebanon	-0.007 (0.005)	827	0.459
Libya	-0.006* (0.003)	1,361	0.303

Table C6: Zero-Sum Thinking and Political Affiliation Across the World (cont.)

Country	Coefficient on left-right index	Num. of obs.	Mean of zero-sum index
Libya	-0.006* (0.003)	1,361	0.303
Lithuania	-0.016*** (0.005)	704	0.422
Malaysia	-0.011*** (0.003)	1,300	0.349
Mali	-0.001 (0.003)	1,149	0.502
Mexico	-0.004* (0.001)	5,593	0.322
Moldova	-0.023 (0.011)	1,577	0.378
Montenegro	0.014 (0.011)	177	0.497
Morocco	-0.023 (0.005)	678	0.539
Netherlands	-0.014 (0.003)	2,455	0.448
New Zealand	-0.025*** (0.001)	1,970	0.413
Nigeria	-0.008* (0.003)	4,283	0.470
North Macedonia	-0.008 (0.006)	640	0.516
Norway	-0.013** (0.001)	2,078	0.400
Pakistan	-0.040*** (0.004)	1,200	0.321
Palestine	-0.013** (0.005)	724	0.507
Peru	-0.001 (0.001)	3,016	0.308
Philippines	-0.009* (0.001)	2,357	0.402
Poland	-0.007 (0.003)	2,899	0.383
Puerto Rico	-0.006 (0.004)	913	0.289
Romania	-0.009 (0.004)	2,848	0.404
Russia	-0.001 (0.005)	3,545	0.411
Rwanda	0.002 (0.001)	2,554	0.360
Serbia	-0.002*** (0.000)	1,770	0.490
Slovakia	-0.012 (0.007)	1,384	0.539
Slovenia	-0.001 (0.005)	2,018	0.508
South Africa	-0.010 (0.005)	9,720	0.382
South Korea	-0.005 (0.005)	4,818	0.418
Spain	-0.012** (0.002)	3,764	0.484
Sweden	-0.011** (0.003)	3,764	0.438
Switzerland	-0.005 (0.003)	1,989	0.388
Taiwan ROC	-0.010 (0.005)	3,071	0.285
Thailand	-0.012 (0.005)	2,710	0.290
Trinidad and Tobago	-0.010 (0.008)	1,203	0.313
Tunisia	-0.009 (0.007)	691	0.388
Turkey	-0.022*** (0.003)	5,087	0.453
Ukraine	-0.017** (0.004)	3,467	0.413
United States	-0.021* (0.009)	6,182	0.401
Uruguay	-0.004 (0.006)	2,504	0.378
Uzbekistan	-0.013* (0.007)	583	0.336
Venezuela	-0.009** (0.004)	834	0.375
Vietnam	-0.010 (0.006)	1,333	0.374
Yemen	0.007 (0.008)	244	0.292
Zambia	0.002 (0.004)	935	0.410
Zimbabwe	0.002 (0.003)	1,500	0.449

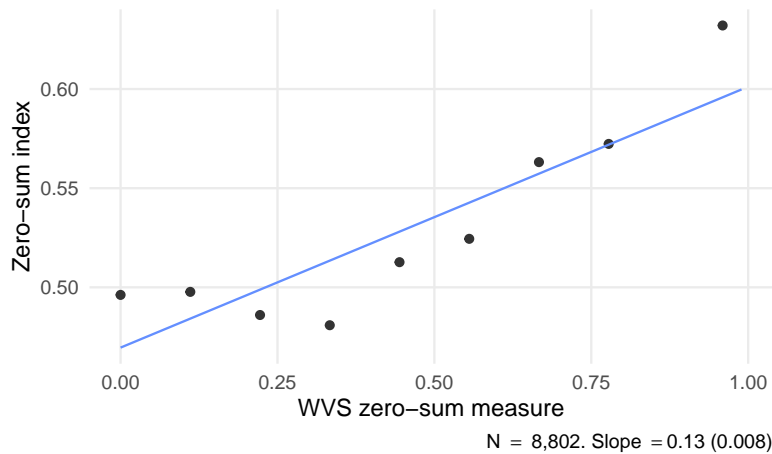


Figure C7: Zero-Sum Index and World Values Survey Measure of Zero-Sum Thinking

Notes: The figure reports a binscatter correlation plot of the relationship between the baseline zero-sum index and the World Values Survey question about zero-sum thinking. Both variables are scaled to be between 0 and 1. Data are from the last three waves of the survey.

Table C7: Zero-Sum Thinking and Ancestral Economic Mobility, Respondents 40 and Older

	Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Parents to respondent mobility	-0.0231*** (0.0020)	-0.0233*** (0.0020)	-0.0237*** (0.0020)			
Grandparents to parents mobility	-0.0214*** (0.0024)	-0.0215*** (0.0025)	-0.0215*** (0.0024)			
Great-grandpar. to grandparents mobility	-0.0137*** (0.0030)	-0.0137*** (0.0030)	-0.0147*** (0.0030)			
Great-grandpar. to respondent mobility				-0.0210*** (0.0017)	-0.0212*** (0.0017)	-0.0216*** (0.0017)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓
Race fixed effects			✓			✓
Observations	7,682	7,682	7,682	7,797	7,797	7,797
R <sup>2</sup>	0.110	0.116	0.128	0.108	0.114	0.126
Dependent variable mean	0.492	0.492	0.492	0.492	0.492	0.492
Dependent variable std. dev.	0.216	0.216	0.216	0.216	0.216	0.216

Notes: The table reports OLS estimates where the unit of observation is an individual. The sample is restricted to those 40 years old or more at the time of the survey. Mobility variables measure the change in economic standing between households when each generation was in adulthood. "Grandparents" refers to the respondent's paternal grandparents, and "great-grandparents" refers to the parents of the respondent's paternal grandfather. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C8: Zero-Sum Thinking and Ancestral Economic Mobility, Variables Included Individually

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Parents to respondent mobility	-0.0124*** (0.0012)	-0.0125*** (0.0012)	-0.0123*** (0.0012)						
Grandparents to parents mobility				-0.0100*** (0.0014)	-0.0100*** (0.0014)	-0.0096*** (0.0014)			
Great-grandpar. to grandparents mobility							-0.0072*** (0.0021)	-0.0069*** (0.0021)	-0.0075*** (0.0021)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	19,522	19,522	19,522	17,255	17,255	17,255	13,247	13,247	13,247
R <sup>2</sup>	0.077	0.083	0.093	0.083	0.090	0.100	0.099	0.105	0.115
Dependent variable mean	0.513	0.513	0.513	0.516	0.516	0.516	0.529	0.529	0.529
Dependent variable std. dev.	0.211	0.211	0.211	0.215	0.215	0.215	0.222	0.222	0.222

Notes: The table reports OLS estimates where the unit of observation is an individual. Mobility variables measure the change in economic standing between households when each generation was in adulthood. "Grandparents" refers to the respondent's paternal grandparents, and "great-grandparents" refers to the parents of the respondent's paternal grandfather. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C9: Zero-Sum Thinking and Ancestral Economic Mobility: U.S. Only

	Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Parents to respondent mobility	-0.0215*** (0.0019)	-0.0217*** (0.0019)	-0.0220*** (0.0019)			
Grandparents to parents mobility	-0.0276*** (0.0023)	-0.0276*** (0.0023)	-0.0276*** (0.0022)			
Great-grandpar. to grandparents mobility	-0.0232*** (0.0027)	-0.0232*** (0.0027)	-0.0237*** (0.0027)			
Great-grandpar. to respondent mobility				-0.0233*** (0.0016)	-0.0234*** (0.0016)	-0.0237*** (0.0016)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓
Race fixed effects			✓			✓
Observations	9,735	9,735	9,735	10,087	10,087	10,087
R <sup>2</sup>	0.119	0.131	0.140	0.119	0.131	0.139
Dependent variable mean	0.537	0.537	0.537	0.539	0.539	0.539
Dependent variable std. dev.	0.222	0.222	0.222	0.222	0.222	0.222

Notes: The table reports OLS estimates where the unit of observation is an individual. Mobility variables measure the change in economic standing between households when each generation was in adulthood. "Grandparents" refers to the respondent's paternal grandparents, and "great-grandparents" refers to the parents of the respondent's paternal grandfather. Mobility measures are missing if they are in reference to relative income measured outside of the U.S. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C10: Zero-Sum Thinking and Mobility, With Enslaved Ancestors and Immigrant Generation Controls

	Zero-sum index (0 to 1)		
	(1)	(2)	(3)
Great-grandpar. to respondent mobility	-0.0219*** (0.0013)	-0.0217*** (0.0013)	-0.0214*** (0.0014)
Enslaved ancestor		0.0965*** (0.0063)	0.1013*** (0.0064)
Respondent immigrated			-0.0429*** (0.0083)
Parent immigrated			-0.0300*** (0.0066)
Grandparent immigrated			0.0062 (0.0051)
Demographic controls	✓	✓	✓
Wave fixed effects	✓	✓	✓
State fixed effects	✓	✓	✓
Race fixed effects	✓	✓	✓
Observations	13,355	13,350	12,724
R <sup>2</sup>	0.133	0.150	0.155
Dependent variable mean	0.529	0.529	0.527
Dependent variable std. dev.	0.221	0.221	0.222

*Notes:* The table reports OLS estimates where the unit of observation is an individual. Mobility variables measure the change in economic standing between households when each generation was in adulthood. “Great-grandparents” refers to the parents of the respondent’s paternal grandfather. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. State fixed effects refer to the respondent’s current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C11: Zero-Sum Thinking and Occupational Mobility

(a) Occupational income score

	Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Father to resp. occ. mobility	-0.0295*	-0.0317*	-0.0342**			
	(0.0169)	(0.0172)	(0.0159)			
Grandfather to father occ. mobility	-0.0168	-0.0190	-0.0194*			
	(0.0119)	(0.0118)	(0.0113)			
Grandfather to resp. occ. mobility				-0.0216*	-0.0238**	-0.0253**
				(0.0112)	(0.0113)	(0.0105)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓
Race fixed effects			✓			✓
Observations	3,408	3,408	3,408	3,517	3,517	3,517
R <sup>2</sup>	0.125	0.140	0.145	0.126	0.141	0.147
Num. clusters	266	266	266	269	269	269
Dependent variable mean	0.507	0.507	0.507	0.510	0.510	0.510
Dependent variable std. dev.	0.226	0.226	0.226	0.226	0.226	0.226

(b) PC measure of occupational status

	Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Father to resp. occ. mobility (PC)	-0.1249*	-0.1392*	-0.1478**			
	(0.0729)	(0.0744)	(0.0727)			
Grandfather to father occ. mobility (PC)	-0.1839***	-0.1953***	-0.1919***			
	(0.0631)	(0.0572)	(0.0556)			
Grandfather to resp. occ. mobility (PC)				-0.1553***	-0.1681***	-0.1687***
				(0.0492)	(0.0495)	(0.0468)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓
Race fixed effects			✓			✓
Observations	3,175	3,175	3,175	3,365	3,365	3,365
R <sup>2</sup>	0.128	0.143	0.149	0.128	0.144	0.151
Num. clusters	260	260	260	266	266	266
Dependent variable mean	0.505	0.505	0.505	0.509	0.509	0.509
Dependent variable std. dev.	0.225	0.225	0.225	0.226	0.226	0.226

Notes: The table reports OLS estimates where the unit of observation is an individual. Mobility in Panel (a) uses the occupational income score from IPUMS, while in Panel (b) it uses the first principal component of several measures of occupational prestige (occupational income score, socio-economic index, Hausen and Warren socio-economic index, Siegel prestige score, Nakao-Treas prestige score, 1950 occupational earnings score, occupational educational score, 1950 and 1990 Nam-Powers-Boyd occupational status score), all from IPUMS. All variables are all aggregated at the level of the Bureau of Labor Statistics broad Standard Occupational Classification (SOC) code. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the relevant generations' occupations' broad BLS codes. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C12: Zero-Sum Thinking and Ancestral Economic Mobility, By Gender of Respondent

	All		Zero-sum index (0 to 1)		Female	
			Male			
	(1)	(2)	(3)	(4)	(5)	(6)
Parents to respondent mobility	-0.0225*** (0.0016)		-0.0254*** (0.0024)		-0.0175*** (0.0022)	
Grandparents to parents mobility	-0.0262*** (0.0019)		-0.0317*** (0.0029)		-0.0174*** (0.0025)	
Great-grandpar. to grandparents mobility	-0.0200*** (0.0022)		-0.0208*** (0.0033)		-0.0165*** (0.0030)	
Great-grandpar. to respondent mobility		-0.0229*** (0.0013)		-0.0260*** (0.0020)		-0.0174*** (0.0018)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
Observations	13,137	13,355	6,895	7,001	6,242	6,354
R <sup>2</sup>	0.122	0.121	0.150	0.147	0.107	0.107
Dependent variable mean	0.529	0.529	0.553	0.553	0.502	0.503
Dependent variable std. dev.	0.222	0.221	0.234	0.234	0.204	0.204

Notes: The table reports OLS estimates where the unit of observation is an individual. Mobility variables measure the change in economic standing between households when each generation was in adulthood. “Grandparents” refers to the respondent’s paternal grandparents, and “great-grandparents” refers to the parents of the respondent’s paternal grandfather. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C13: Zero-Sum Thinking and Ancestral Economic Mobility, Mother’s Line, By Gender of Respondent

	All		Zero-sum index (0 to 1)		Female	
			Male			
	(1)	(2)	(3)	(4)	(5)	(6)
Parents to respondent mobility	-0.0199*** (0.0016)		-0.0239*** (0.0024)		-0.0149*** (0.0020)	
Grandparents to parents mobility	-0.0168*** (0.0018)		-0.0207*** (0.0028)		-0.0116*** (0.0023)	
Great-grandpar. to grandparents mobility	-0.0147*** (0.0021)		-0.0184*** (0.0032)		-0.0098*** (0.0027)	
Great-grandpar. to respondent mobility		-0.0177*** (0.0013)		-0.0215*** (0.0020)		-0.0126*** (0.0017)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
Observations	13,901	14,099	7,031	7,113	6,870	6,986
R <sup>2</sup>	0.109	0.108	0.139	0.137	0.095	0.094
Dependent variable mean	0.525	0.526	0.551	0.551	0.499	0.500
Dependent variable std. dev.	0.220	0.220	0.234	0.234	0.202	0.202

Notes: The table reports OLS estimates where the unit of observation is an individual. Mobility variables measure the change in economic standing between households when each generation was in adulthood. “Grandparents” refers to the respondent’s maternal grandparents, and “great-grandparents” refers to the parents of the respondent’s maternal grandmother. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.



Table C14: Zero-Sum Thinking and Immigration, Variables Included Individually

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent immigrated	-0.0473*** (0.0056)	-0.0482*** (0.0057)	-0.0382*** (0.0062)						
Parent immigrated				-0.0254*** (0.0045)	-0.0265*** (0.0046)	-0.0187*** (0.0048)			
Grandparent immigrated							0.0042 (0.0041)	0.0056 (0.0041)	0.0072* (0.0041)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	20,282	20,282	20,282	20,123	20,123	20,123	18,717	18,717	18,717
R <sup>2</sup>	0.073	0.078	0.086	0.072	0.077	0.087	0.073	0.078	0.089
Dependent variable mean	0.514	0.514	0.514	0.514	0.514	0.514	0.512	0.512	0.512
Dependent variable std. dev.	0.211	0.211	0.211	0.211	0.211	0.211	0.212	0.212	0.212

Notes: The table reports OLS estimates where the unit of observation is an individual. Since all respondents are in the U.S. when surveyed, we define “Respondent immigrated” as an indicator equal to one if the respondent was born outside the United States. “Parent immigrated” is an indicator equal to one if the respondent was born in the U.S. and at least one of their parents was born outside the U.S. This variable is missing, and hence the respondent is not included in the regression, if they indicated that they do not know whether either of their parents was born in the U.S. “Grandparent immigrated” is an indicator equal to one if the respondent was born in the U.S. and either (1) their father was born in the U.S. and at least one paternal grandparent was born outside the U.S., or (2) their mother was born in the U.S. and at least one maternal grandparent was born outside the U.S. This variable is missing, and hence the respondent is not included in the regression, if they indicated that they do not know where any of their four grandparents were born. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C15: Zero-Sum Thinking and Race, With Enslaved Ancestors Controls

	Zero-sum index (0 to 1)				
	(1)	(2)	(3)	(4)	(5)
African American/Black	0.0595*** (0.0048)	0.0301*** (0.0052)	0.0542*** (0.0073)	0.0260*** (0.0078)	0.0325*** (0.0081)
American Indian or Alaska Native	-0.0087 (0.0153)	-0.0178 (0.0155)	-0.0067 (0.0188)	-0.0161 (0.0189)	-0.0058 (0.0189)
Asian/Asian American	-0.0226*** (0.0069)	-0.0222*** (0.0068)	-0.0179 (0.0111)	-0.0185* (0.0111)	-0.0168 (0.0111)
Hispanic/Latino	-0.0003 (0.0051)	-0.0002 (0.0051)	-0.0032 (0.0071)	-0.0024 (0.0070)	-0.0034 (0.0071)
Native Hawaiian or Other Pacific Islander	0.0109 (0.0268)	-0.0018 (0.0279)	0.0778*** (0.0294)	0.0639** (0.0306)	0.0797*** (0.0297)
Other race	-0.0037 (0.0091)	-0.0151* (0.0091)	0.0029 (0.0130)	-0.0093 (0.0132)	-0.0032 (0.0131)
Enslaved ancestor		0.0872*** (0.0055)		0.0853*** (0.0080)	
Enslavement of African descendants					0.0461*** (0.0071)
Demographic controls	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓
Observations	20,274	20,274	8,799	8,799	8,799
R <sup>2</sup>	0.086	0.100	0.118	0.132	0.123
Dependent variable mean	0.514	0.514	0.521	0.521	0.521
Dependent variable std. dev.	0.211	0.211	0.215	0.215	0.215

Notes: The table reports OLS estimates where the unit of observation is an individual. Columns 3-5 restrict the sample to waves 5-7, where we asked additional questions about episode of enslavement. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. State fixed effects refer to the respondent's current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C16: Zero-Sum Thinking and Growing Up in Counties With Historical Enslavement: Fathers and Grandfathers

	Zero-sum index (0 to 1)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Respondent's county enslaved share	0.0471*** (0.0124)	0.0528*** (0.0135)	0.0353*** (0.0134)	0.0364*** (0.0134)								
Father's county enslaved share					0.0772*** (0.0131)	0.0809*** (0.0136)	0.0474*** (0.0140)	0.0449*** (0.0138)				
Grandfather's county enslaved share									0.0590*** (0.0143)	0.0708*** (0.0151)	0.0377** (0.0156)	0.0295* (0.0156)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓			✓	✓
Enslaved ancestor				✓				✓				✓
Observations	18,310	18,310	18,310	18,303	14,522	14,522	14,522	14,518	9,153	9,153	9,153	9,152
R <sup>2</sup>	0.058	0.063	0.072	0.079	0.071	0.079	0.087	0.097	0.076	0.089	0.096	0.113
Num. clusters	2,087	2,087	2,087	2,087	2,256	2,256	2,256	2,255	2,059	2,059	2,059	2,059
Dependent variable mean	0.507	0.507	0.507	0.507	0.509	0.509	0.509	0.509	0.518	0.518	0.518	0.518
Dependent variable std. dev.	0.206	0.206	0.206	0.206	0.210	0.210	0.210	0.210	0.216	0.216	0.216	0.216

Notes: The table reports OLS estimates where the unit of observation is an individual. "Enslaved share" refers to the proportion of individuals in a county who were enslaved according to the 1860 Census. Counties in non-slave states or in states that did not exist in 1860 are coded as having zero share enslaved. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for fathers and paternal grandfathers. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the respondent's county, father's county, or paternal grandfather's county, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C17: Zero-Sum Thinking and Growing Up in Counties With In-Migration from the U.S. South and Confederate Culture, With Controls for Southern Black Share and Enslaved Ancestor

(a) Share of Southern whites

	Zero-sum index (0 to 1)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Respondent's county southern white share	0.0362 (0.0780)	0.0669 (0.0814)	0.0935 (0.0829)	0.0978 (0.0810)								
Respondent's county southern Black share	1.099*** (0.3109)	0.9319*** (0.3066)	0.5977* (0.3393)	0.5633* (0.3205)								
Parents' counties southern white share					0.1386** (0.0686)	0.1967*** (0.0692)	0.2135*** (0.0692)	0.2132*** (0.0679)				
Parents' counties southern Black share					0.6927*** (0.2563)	0.5151** (0.2177)	0.2129 (0.2464)	0.1783 (0.2306)				
Grandparents' counties southern white share									0.2424*** (0.0938)	0.2907*** (0.0800)	0.2943*** (0.0794)	0.2907*** (0.0779)
Grandparents' counties southern Black share									0.5216*** (0.1881)	0.3523** (0.1642)	0.1036 (0.1655)	0.0654 (0.1553)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓	✓		✓	✓			✓	✓
Enslaved ancestor				✓				✓				✓
Observations	13,134	13,134	13,134	13,129	12,249	12,249	12,249	12,245	9,446	9,446	9,446	9,445
R <sup>2</sup>	0.064	0.071	0.081	0.088	0.070	0.080	0.089	0.097	0.074	0.088	0.098	0.112
Num. clusters	1,240	1,240	1,240	1,240	1,555	1,555	1,555	1,555	1,462	1,462	1,462	1,462
Dependent variable mean	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.502	0.502	0.502	0.502
Dependent variable std. dev.	0.205	0.205	0.205	0.205	0.208	0.208	0.208	0.208	0.212	0.212	0.212	0.212

(b) Confederate Culture Index

	Zero-sum index (0 to 1)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Respondent's county CCI (0 to 4)	0.0073*** (0.0014)	0.0075*** (0.0017)	0.0056*** (0.0018)	0.0053*** (0.0018)								
Parents' counties CCI (0 to 4)					0.0114*** (0.0016)	0.0109*** (0.0018)	0.0081*** (0.0018)	0.0077*** (0.0017)				
Grandparents' counties CCI (0 to 4)									0.0146*** (0.0023)	0.0145*** (0.0025)	0.0109*** (0.0025)	0.0099*** (0.0024)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓	✓		✓	✓			✓	✓
Enslaved ancestor				✓				✓				✓
Observations	18,168	18,168	18,168	18,161	16,130	16,130	16,130	16,124	12,685	12,685	12,685	12,684
R <sup>2</sup>	0.059	0.064	0.072	0.079	0.070	0.076	0.085	0.094	0.073	0.081	0.089	0.103
Num. clusters	2,051	2,051	2,051	2,051	2,200	2,200	2,200	2,199	2,023	2,023	2,023	2,023
Dependent variable mean	0.507	0.507	0.507	0.507	0.510	0.510	0.510	0.510	0.512	0.512	0.512	0.512
Dependent variable std. dev.	0.206	0.206	0.206	0.206	0.209	0.209	0.209	0.209	0.212	0.212	0.212	0.212

Notes: The table reports OLS estimates where the unit of observation is an individual. "Southern white share" and "Southern black share" refer to the proportion of individuals in a non-Southern county who were born in the U.S. South. The sample in the first panel omits all counties from the U.S. Confederate South. "CCI" is the Confederate Culture Index from Bazzi et al. (2023a); see text for more details. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the respondent's county, parents' counties, or grandparents' counties, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table C18: Zero-Sum Thinking and Growing Up in Counties With In-Migration from the U.S. South and Confederate Culture: Fathers and Grandfathers

(a) Share of Southern whites									
	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county southern white share	0.0989 (0.0771)	0.1549** (0.0759)	0.1498** (0.0739)						
Father's county southern white share				0.1637* (0.0836)	0.2040*** (0.0718)	0.1896*** (0.0707)			
Grandfather's county southern white share							0.4260*** (0.1285)	0.4917*** (0.1102)	0.4675*** (0.1088)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	13,134	13,134	13,134	10,493	10,493	10,493	6,278	6,278	6,278
R <sup>2</sup>	0.060	0.068	0.080	0.073	0.084	0.094	0.087	0.108	0.116
Num. clusters	1,240	1,240	1,240	1,334	1,334	1,334	1,218	1,218	1,218
Dependent variable mean	0.500	0.500	0.500	0.499	0.499	0.499	0.509	0.509	0.509
Dependent variable std. dev.	0.205	0.205	0.205	0.210	0.210	0.210	0.215	0.215	0.215

(b) Confederate Culture Index									
	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county CCI (0 to 4)	0.0073*** (0.0014)	0.0075*** (0.0017)	0.0056*** (0.0018)						
Father's county CCI (0 to 4)				0.0103*** (0.0017)	0.0093*** (0.0019)	0.0068*** (0.0019)			
Grandfather's county CCI (0 to 4)							0.0133*** (0.0024)	0.0128*** (0.0026)	0.0103*** (0.0026)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	18,168	18,168	18,168	14,351	14,351	14,351	9,004	9,004	9,004
R <sup>2</sup>	0.059	0.064	0.072	0.072	0.079	0.088	0.081	0.092	0.100
Num. clusters	2,051	2,051	2,051	2,205	2,205	2,205	2,005	2,005	2,005
Dependent variable mean	0.507	0.507	0.507	0.509	0.509	0.509	0.518	0.518	0.518
Dependent variable std. dev.	0.206	0.206	0.206	0.211	0.211	0.211	0.216	0.216	0.216

Notes: The table reports OLS estimates where the unit of observation is an individual. "Southern white share" and "Southern black share" refer to the proportion of individuals in a non-Southern county who were born in the U.S. South. The sample in the first panel omits all counties from the U.S. Confederate South. "CCI" is the Confederate Culture Index from Bazzi et al. (2023a); see text for more details. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the respondent's county, father's county, or paternal grandfather's county, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

## Appendix D. Robustness to Keeping Only the Most Attentive Respondents

We next examine the robustness of our main results to the respondents' level of attentiveness and care in answering the survey. To do so, we implement four stringent criteria that help us flag the most attentive respondents. Note that these criteria are intentionally strict for the sake of checking the robustness of our results, and respondents who do not meet them are not necessarily inattentive. We identify respondents in four categories:

1. Those who fall into a subtle attention trap, which is a question that asks respondents whether they agree with the following statement: "It is easy to find accurate and reliable information in the media these days." However, the instruction block that precedes the question says, "To show that you are reading the full set of instructions, just go ahead and select both strongly agree and strongly disagree among the alternatives below, no matter what your opinion is." Passing this attention trap requires very careful reading. Even attentive respondents who do not rush tend to fail this test. Nevertheless, we view this as a very stringent test that only keeps the most attentive respondents, i.e., 48% of the sample.
2. Those who answer in the negative to a question asking respondents to report honestly whether they have devoted their full attention to the survey (1% of respondents).
3. Those who frequently answer with "extreme" options: the 10% of respondents in each wave who answered the highest share of questions with either the smallest or largest possible answer.
4. Those who frequently answer with the "middle" option: the 10% of respondents in each wave who answered the highest share of questions with the middle response (when applicable).

In total, 58% of respondents are flagged using at least one of these methods. Below, we reproduce our main results using only the responses who do not fall in any of these four groups ("attentive respondents.")

- Figure D1 reproduces Figure 2, showing the distribution of responses to the four baseline zero-sum questions after restricting the sample to just the most attentive respondents.

- Table D1 reproduces Table 2, showing the first and second principal components of the four zero-sum questions, again restricting the sample to just the most attentive respondents.
- Figure D2 reproduces Figure 3, showing demographic correlates of zero-sum thinking.
- Figure D3 reproduces Figure 5, showing the density of the zero-sum index by party.
- Figure D4 reproduces Figure 6, showing correlations between the zero-sum index and policy views.
- Figure D5 reproduces Figure 7, showing correlations between the zero-sum index and policy views controlling for other core beliefs.
- Figure D6 reproduces Figure 11, showing the proportion of Democrats who voted for Donald Trump by zero-sum quartile.
- Figure D7 reproduces Figure 14, showing an index of anti-immigration attitudes among Democrats and an index of pro-redistribution attitudes among Republicans by zero-sum quartile.
- Table D2 reproduces Table 3, showing the relationship between the zero-sum index and ancestral mobility.
- Table D3 reproduces Table 4, showing the relationship between the zero-sum index and the respondent's immigrant generation.
- Table D4 reproduces Table 5, showing the relationship between the zero-sum index and the foreign share in the respondents' own county, their parents' counties, and their grandparents' counties.
- Table D5 reproduces Table 6, showing the relationship between the zero-sum index and the respondent's race.
- Table D6 reproduces Table 7, showing the relationship between the zero-sum index and the respondent's family's history of enslavement.
- Table D7 reproduces Table 9, showing the relationship between the zero-sum index and the fraction of enslaved people in 1860 in the respondents' own county, their parents' counties, and their grandparents' counties.

- Table D8 reproduces Table 10, showing the relationship between the zero-sum index and the share of southern whites in the respondents' own county, their parents' counties, and their grandparents' counties.
- Table D9 reproduces Table 11, showing the relationship between the zero-sum index and the Confederate Culture Index in the respondents' own county, their parents' counties, and their grandparents' counties.

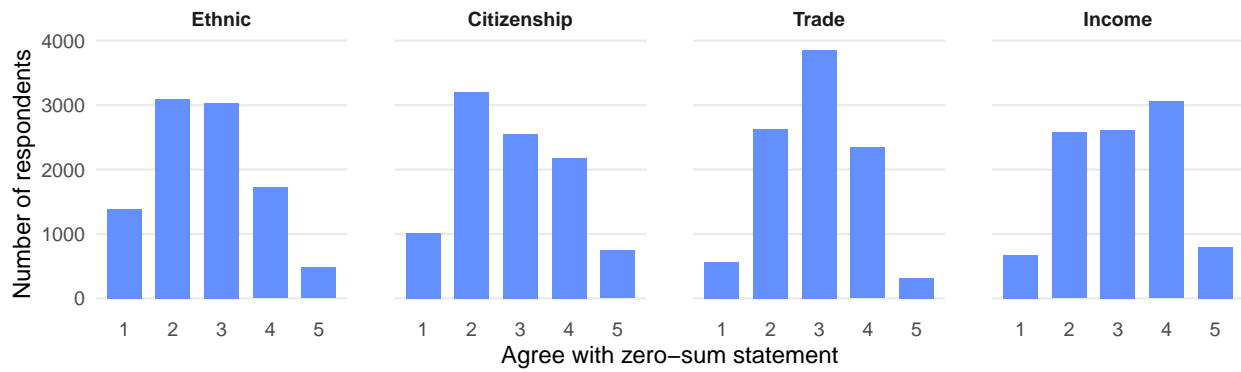


Figure D1: Distributions of Responses to Zero-Sum Questions

Notes: The figure shows the distribution of responses to the two-statement zero-sum questions. Statement 2 is the more zero-sum statement, and answer options are (1) Strongly agree with 1, (2) Agree with 1, (3) Agree with 2, (4) Strongly agree with 2.

Table D1: PCA Factor Loadings: First and Second Principal Components

Question	1st PC (Eigenvalue: 2.12)	2nd PC (Eigenvalue: 0.86)
Ethnicity	0.55	-0.30
Citizenship	0.35	0.91
Trade	0.53	0.01
Income	0.54	-0.30

Notes: The table shows factor loadings for the first two principal components for each of the four component questions of the zero-sum index.

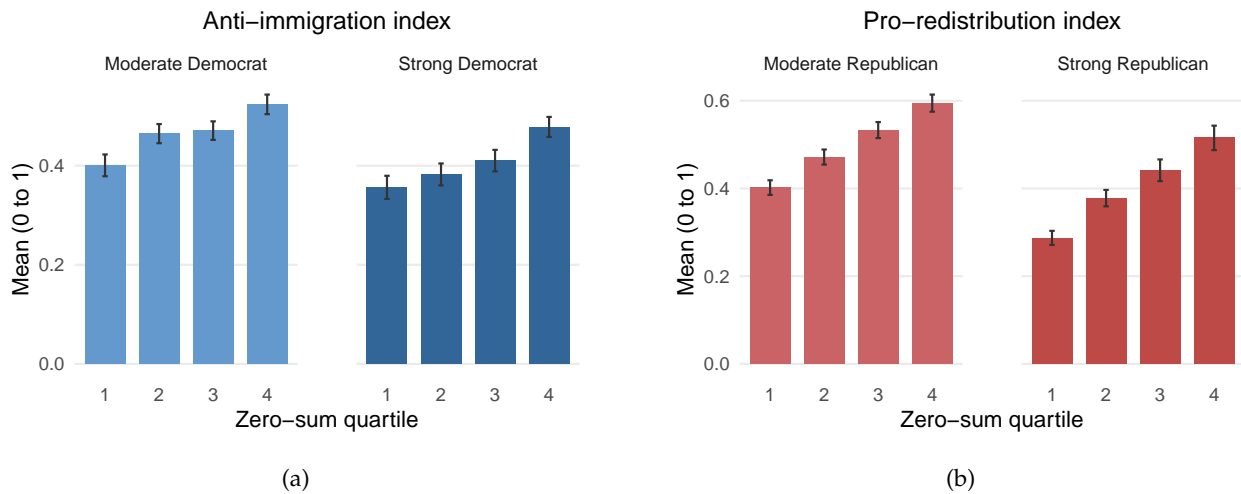


Figure D7: Zero-Sum Thinking and Within-Party Differences

Notes: Vertical bars are 95% confidence intervals.



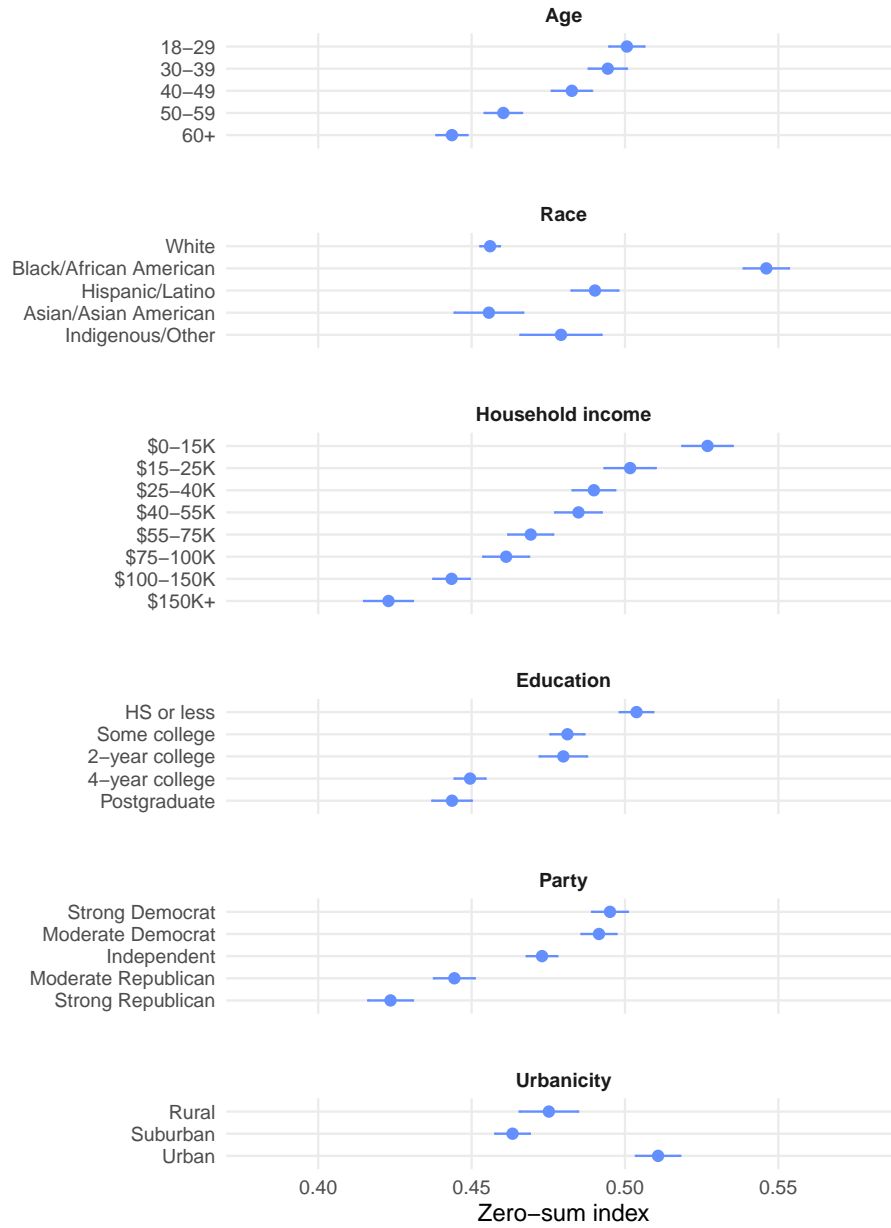


Figure D2: Average Zero-Sum Index by Demographic Group

Notes: Horizontal bars are 95% confidence intervals.

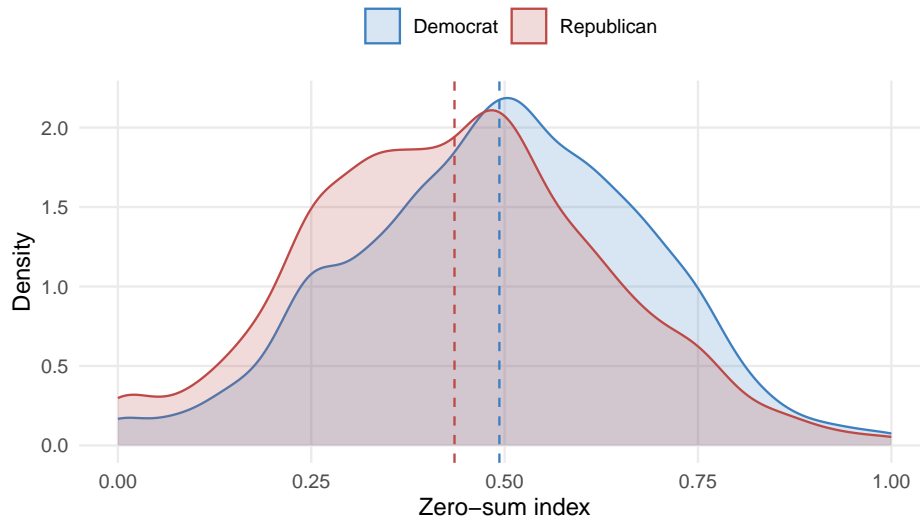


Figure D3: Density of Zero-Sum Index By Party

Notes: Vertical lines show the mean zero-sum index for each party. “Republican” includes respondents who considered themselves “Strong Republican” or “Moderate Republican”, and “Democrat” includes respondents who considered themselves “Strong Democrat” or “Moderate Democrat.” Those who considered themselves “Independent” are not shown.

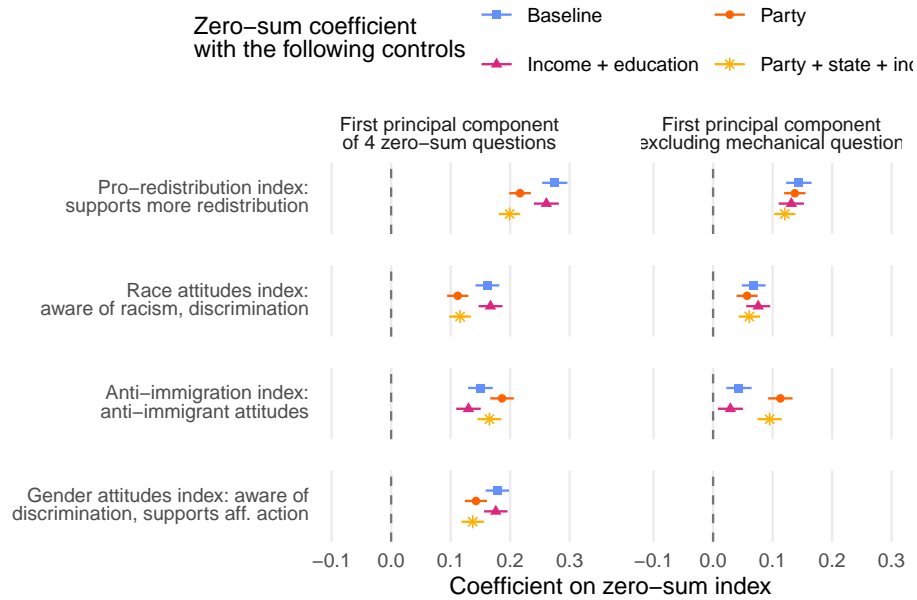


Figure D4: Zero-Sum Thinking and Policy Views

Notes: Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, as well as whether the respondent was born in the United States, wave fixed effects, and race fixed effects. The four estimates for each outcome in each column correspond to the baseline specification, as well as specifications that add (1) income and education, (2) party, and (3) income, education, party, and current state fixed effects. Outcomes and regressors are standardized to have mean zero and standard deviation one. Horizontal bars are 95% confidence intervals.



Figure D5: Zero-Sum Thinking and Policy Views, Controlling For Other Core Beliefs

Notes: Each coefficient is from a separate regression with controls for age, gender, and their interaction, as well as whether the respondent was born in the United States and fixed effects for survey wave, race, party, household income, education, and current state. The two estimates for each outcome correspond to the baseline specification, as well as specifications that add to the regression a measure of another core belief or attitude: whether the respondent thinks luck is more important than effort, their perceptions of economic mobility, the degree to which they are a moral universalist, whether they think tradition is important, and whether they think people can generally be trusted. For each combination of outcome and control variable, the baseline regression is restricted to observations without the control missing, so that each pair of coefficients is estimated on the same sample. Outcomes, regressors, and measures of other attitudes are standardized to have mean zero and standard deviation one. Index measures are the first principal component of the relevant questions. Horizontal bars are 95% confidence intervals.

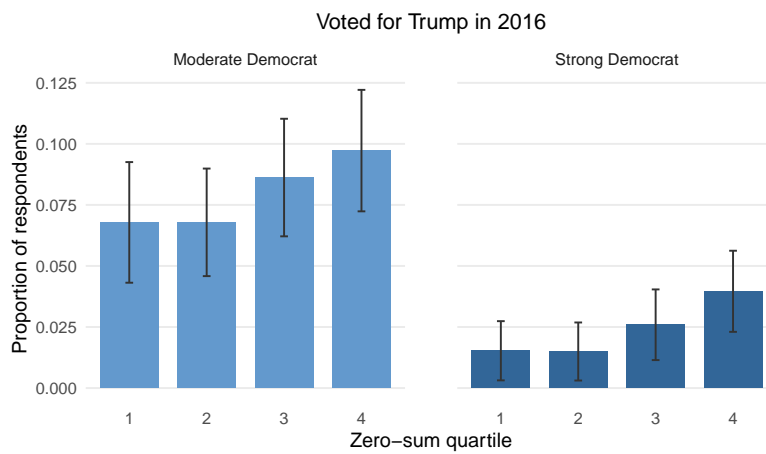


Figure D6: Democrats Voting for Trump by Zero-Sum Quartile

Notes: Vertical bars are 95% confidence intervals.

Table D2: Zero-Sum Thinking and Ancestral Economic Mobility

	Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Parents to respondent mobility	-0.0160*** (0.0022)	-0.0162*** (0.0022)	-0.0170*** (0.0022)			
Grandparents to parents mobility	-0.0136*** (0.0025)	-0.0138*** (0.0025)	-0.0146*** (0.0025)			
Great-grandpar. to grandparents mobility	-0.0075** (0.0030)	-0.0072** (0.0030)	-0.0084*** (0.0030)			
Great-grandpar. to respondent mobility				-0.0142*** (0.0018)	-0.0143*** (0.0018)	-0.0152*** (0.0018)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓
Race fixed effects			✓			✓
Observations	5,759	5,759	5,759	5,845	5,845	5,845
R <sup>2</sup>	0.045	0.056	0.071	0.044	0.056	0.071
Dependent variable mean	0.468	0.468	0.468	0.469	0.469	0.469
Dependent variable std. dev.	0.200	0.200	0.200	0.200	0.200	0.200

*Notes:* The table reports OLS estimates where the unit of observation is an individual. Mobility variables measure the change in economic standing experienced by a generation from the household in which they grew up to their household as an adult. See text for more details. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table D3: Zero-Sum Thinking and Immigration

	Zero-sum index (0 to 1)		
	(1)	(2)	(3)
Respondent immigrated	-0.0400*** (0.0084)	-0.0383*** (0.0085)	-0.0442*** (0.0094)
Parent immigrated	-0.0223*** (0.0064)	-0.0213*** (0.0067)	-0.0240*** (0.0074)
Grandparent immigrated	-0.0186*** (0.0056)	-0.0163*** (0.0058)	-0.0118** (0.0058)
Demographic controls	✓	✓	✓
Wave fixed effects	✓	✓	✓
State fixed effects		✓	✓
Race fixed effects			✓
Observations	9,171	9,171	9,171
R <sup>2</sup>	0.028	0.037	0.052
Dependent variable mean	0.468	0.468	0.468
Dependent variable std. dev.	0.193	0.193	0.193

*Notes:* The table reports OLS estimates where the unit of observation is an individual. Since all respondents are in the U.S. when surveyed, we define “Respondent immigrated” as an indicator equal to one if the respondent was born outside the United States. “Parent immigrated” is an indicator equal to one if the respondent was born in the U.S. and at least one of their parents was born outside the U.S. This variable is missing, and hence the respondent is not included in the regression, if they indicated that they do not know whether either of their parents was born in the U.S. “Grandparent immigrated” is an indicator equal to one if the respondent was born in the U.S. and either (1) their father was born in the U.S. and at least one paternal grandparent was born outside the U.S., or (2) their mother was born in the U.S. and at least one maternal grandparent was born outside the U.S. This variable is missing, and hence the respondent is not included in the regression, if they indicated that they do not know where any of their four grandparents were born. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table D4: Zero-Sum Thinking and County Foreign Share 1860-1920, With Immigrant Generation Controls

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county foreign share	-0.0118 (0.0188)	-0.0072 (0.0193)	-0.0028 (0.0202)						
Parents' counties foreign share				-0.0414** (0.0209)	-0.0384* (0.0206)	-0.0347 (0.0228)			
Grandparents' counties foreign share							-0.0596*** (0.0165)	-0.0591*** (0.0164)	-0.0556*** (0.0194)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
2nd generation immigrant		✓	✓		✓	✓		✓	✓
3rd generation immigrant			✓			✓			✓
Observations	8,777	8,745	8,292	7,954	7,953	7,597	6,328	6,326	6,326
R <sup>2</sup>	0.048	0.049	0.053	0.052	0.052	0.056	0.058	0.058	0.059
Num. clusters	1,601	1,600	1,576	1,729	1,729	1,707	1,509	1,509	1,509
Dependent variable mean	0.471	0.471	0.470	0.470	0.470	0.468	0.468	0.468	0.468
Dependent variable std. dev.	0.192	0.192	0.192	0.192	0.192	0.193	0.193	0.193	0.193
Indep. variable mean	0.172	0.172	0.172	0.175	0.175	0.175	0.162	0.162	0.162
Indep. variable std. dev.	0.122	0.122	0.122	0.123	0.123	0.123	0.122	0.122	0.122

Notes: The table reports OLS estimates where the unit of observation is an individual. "Foreign share" refers to the proportion of individuals in a county who were born outside of the U.S., averaged over the 1860 to 1920 period. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the respondent's county, parents' counties, or grandparents' counties, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table D5: Zero-Sum Thinking and Race

	Zero-sum index (0 to 1)				
	(1)	(2)	(3)	(4)	(5)
African American/Black	0.0832*** (0.0067)	0.0822*** (0.0068)	0.0789*** (0.0068)	0.0705*** (0.0069)	0.0694*** (0.0091)
American Indian or Alaska Native	0.0407* (0.0208)	0.0410* (0.0213)	0.0346 (0.0212)	0.0308 (0.0207)	0.0089 (0.0234)
Asian/Asian American	0.0017 (0.0096)	0.0057 (0.0100)	0.0115 (0.0100)	0.0131 (0.0099)	0.0121 (0.0152)
Hispanic/Latino	0.0189*** (0.0066)	0.0209*** (0.0070)	0.0147** (0.0070)	0.0098 (0.0070)	0.0146 (0.0098)
Native Hawaiian or Other Pacific Islander	0.0273 (0.0468)	0.0312 (0.0490)	0.0278 (0.0495)	0.0213 (0.0499)	-0.0260 (0.0685)
Other race	-0.0002 (0.0118)	0.0014 (0.0118)	-0.0039 (0.0117)	-0.0070 (0.0116)	-0.0041 (0.0146)
Demographic controls	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓	✓
Education fixed effects			✓	✓	✓
Household income fixed effects				✓	✓
Birth town fixed effects					✓
Observations	9,698	9,698	9,698	9,697	9,057
R <sup>2</sup>	0.041	0.048	0.058	0.067	0.289
Dependent variable mean	0.470	0.470	0.470	0.470	0.472
Dependent variable std. dev.	0.192	0.192	0.192	0.192	0.191

Notes: The table reports OLS estimates where the unit of observation is an individual. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. State fixed effects refer to the respondent's current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table D6: Zero-Sum Thinking and Ancestral Enslavement

	Zero-sum index (0 to 1)							
	Black only		Latino, Indig., Asian, other		White only		Full sample	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Enslaved ancestor	0.0163 (0.0120)	0.0164 (0.0123)	0.0164 (0.0172)	0.0150 (0.0176)	0.0271* (0.0164)	0.0283* (0.0164)	0.0192** (0.0085)	0.0196** (0.0085)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	-	-	-	-	-	-	✓	✓
State fixed effects		✓		✓		✓		✓
Observations	1,020	1,020	1,867	1,867	6,810	6,810	9,697	9,697
R <sup>2</sup>	0.010	0.052	0.045	0.071	0.022	0.031	0.042	0.049
Dependent variable mean	0.546	0.546	0.478	0.478	0.456	0.456	0.470	0.470
Dependent variable std. dev.	0.186	0.186	0.190	0.190	0.191	0.191	0.192	0.192
Indep. variable mean	0.444	0.444	0.078	0.078	0.028	0.028	0.082	0.082
Indep. variable std. dev.	0.497	0.497	0.269	0.269	0.166	0.166	0.274	0.274

Notes: The table reports OLS estimates where the unit of observation is an individual. The "enslaved ancestor" indicator is one if the respondent reports having an ancestor who was enslaved at any point during the ancestor's lifetime. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. State fixed effects refer to the respondent's current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table D7: Zero-Sum Thinking and Growing Up in Counties With Historical Enslavement

	Zero-sum index (0 to 1)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Respondent's county enslaved share	0.0518*** (0.0144)	0.0531*** (0.0175)	0.0324* (0.0170)	0.0329* (0.0170)								
Parents' counties enslaved share					0.0927*** (0.0144)	0.0987*** (0.0166)	0.0499*** (0.0163)	0.0499*** (0.0163)				
Grandparents' counties enslaved share									0.1012*** (0.0115)	0.1094*** (0.0139)	0.0493*** (0.0099)	0.0487*** (0.0099)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓			✓	✓
Enslaved ancestor				✓				✓				✓
Observations	9,151	9,151	9,151	9,150	8,178	8,178	8,178	8,177	6,482	6,482	6,482	6,482
R <sup>2</sup>	0.025	0.033	0.047	0.048	0.027	0.036	0.051	0.052	0.028	0.041	0.058	0.059
Num. clusters	1,682	1,682	1,682	1,682	1,783	1,783	1,783	1,783	1,554	1,554	1,554	1,554
Dependent variable mean	0.471	0.471	0.471	0.471	0.470	0.470	0.470	0.470	0.469	0.469	0.469	0.469
Dependent variable std. dev.	0.192	0.192	0.192	0.192	0.192	0.192	0.192	0.192	0.192	0.192	0.192	0.192
Indep. variable mean	0.063	0.063	0.063	0.063	0.064	0.064	0.064	0.064	0.074	0.074	0.074	0.074
Indep. variable std. dev.	0.146	0.146	0.146	0.146	0.143	0.143	0.143	0.143	0.150	0.150	0.150	0.150

Notes: The table reports OLS estimates where the unit of observation is an individual. "Enslaved share" refers to the proportion of individuals in a county who were enslaved according to the 1860 Census. Counties in non-slave states or in states that did not exist in 1860 are coded as having zero enslaved share. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the respondent's county, parents' counties, or grandparents' counties, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table D8: Zero-Sum Thinking and Growing Up in Counties With In-Migration from the U.S. South

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county southern white share	0.0824 (0.0659)	0.1436* (0.0806)	0.1246 (0.0769)						
Parents' counties southern white share				0.0814 (0.0564)	0.1307** (0.0653)	0.0843 (0.0628)			
Grandparents' counties southern white share							0.1259** (0.0603)	0.1621** (0.0658)	0.0735 (0.0484)
Demographic controls		✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects		✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects			✓	✓		✓	✓	✓	✓
Race fixed effects				✓			✓		✓
Observations		6,695	6,695	6,695	6,310	6,310	6,310	4,873	4,873
R <sup>2</sup>		0.025	0.037	0.055	0.025	0.037	0.055	0.024	0.040
Num. clusters		1,028	1,028	1,028	1,239	1,239	1,239	1,082	1,082
Dependent variable mean		0.467	0.467	0.467	0.463	0.463	0.463	0.460	0.460
Dependent variable std. dev.		0.191	0.191	0.191	0.191	0.191	0.191	0.192	0.192

Notes: The table reports OLS estimates where the unit of observation is an individual. "Southern white share" refers to the proportion of individuals in a non-Southern county who were born in the U.S. South. The sample omits all counties from the U.S. Confederate South. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. All variables are defined in Appendix B, with summary statistics in Tables B3 and B4. Standard errors are clustered by the respondent's county, parents' counties, or grandparents' counties, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.



Table D9: Zero-Sum Thinking and Growing Up in Counties With Confederate Culture

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county CCI (0 to 4)	0.0019 (0.0016)	0.0018 (0.0018)	-0.0006 (0.0019)						
Parents' counties CCI (0 to 4)				0.0032* (0.0019)	0.0028 (0.0020)	-0.0010 (0.0020)			
Grandparents' counties CCI (0 to 4)							0.0083*** (0.0014)	0.0083*** (0.0019)	0.0031 (0.0021)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	9,087	9,087	9,087	8,098	8,098	8,098	6,399	6,399	6,399
R <sup>2</sup>	0.023	0.032	0.047	0.023	0.033	0.051	0.025	0.038	0.058
Num. clusters	1,660	1,660	1,660	1,756	1,756	1,756	1,525	1,525	1,525
Dependent variable mean	0.471	0.471	0.471	0.470	0.470	0.470	0.469	0.469	0.469
Dependent variable std. dev.	0.192	0.192	0.192	0.192	0.192	0.192	0.193	0.193	0.193

Notes: The table reports OLS estimates where the unit of observation is an individual. "CCI" is the Confederate Culture Index from Bazzi et al. (2023a); see text for more details. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. All variables are defined in Appendix B, with summary statistics in Tables B3 and B4. Standard errors are clustered by the respondent's county, parents' counties, or grandparents' counties, and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

## **Appendix E. Robustness to Question Formulation**

To mitigate concerns about bias due to acquiescence – the tendency to answer items in a positive way regardless of their content, for example, systematically selecting “agree,” “true,” or “yes” (Stantcheva, 2022) – we asked respondents in later waves four “two-statement” zero-sum questions. Each question asks respondents to consider two opposing statements and report which one they agree with and the extent to which they agree, using one of the following four options: (1) Strongly agree with 1, (2) Agree with 1, (3) Agree with 2, (4) Strongly agree with 2. We asked these questions across the four domains corresponding to our primary zero-sum questions: ethnicity, trade, citizenship, and wealth/income. The statements are listed below:

### **Ethnicity**

- Statement 1: If one ethnic group becomes richer, this generally does not come at the expense of other ethnic groups in the country
- Statement 2: If one ethnic group becomes richer, this generally comes at the expense of other ethnic groups in the country

### **Trade**

- Statement 1: If one country makes more money, this generally does not come at the expense of other countries
- Statement 2: If one country makes more money, this generally comes at the expense of other countries

### **Citizenship**

- Statement 1: If people without American citizenship do better economically, this generally does not come at the expense of American citizens
- Statement 2: If people without American citizenship do better economically, this generally comes at the expense of American citizens

### **Income**

- Statement 1: Most of the wealth of the rich was created without taking it from others

- Statement 2: Most of the wealth of the rich was obtained by taking it from others

The distributions of answers are shown in Figure E1, and like the baseline questions, we see significant variation in views in all four domains.

We first use these questions to identify internally inconsistent respondents: those who answer with the *least* zero-sum response when asked the baseline zero-sum question about e.g. ethnicity, but answer with the *most* zero-sum response when asked the two-statement zero-sum question about ethnicity. We do this for all four domains: ethnicity, citizenship, trade, and income. We exclude the 4.1% of internally inconsistent respondents from the following analysis.

We then reproduce the main analysis in the paper with these two-statement questions. First, we conduct a principal component analysis, and show that the four two-statement questions all load positively on the first principal component, like the questions in our baseline zero-sum index. Table E1 shows the factor loadings. We take the first principal component, scaled between 0 and 1, and confirm that our main results are robust to this alternative measure of zero-sum thinking. In Figure E2, we show that the two-statement zero-sum index lines up with the baseline zero-sum measure with a slope coefficient of 0.719 (s.e. = 0.011).

Figure E3 reproduces Figure 3, showing demographic correlates of zero-sum thinking. Figure E4 reproduces Figure 5, showing the density of the zero-sum index by party. Figure E5 reproduces Figure 6, showing correlations between the zero-sum index and policy views. Figure E6 reproduces Figure 7, showing correlations between the zero-sum index and policy views controlling for other core beliefs.

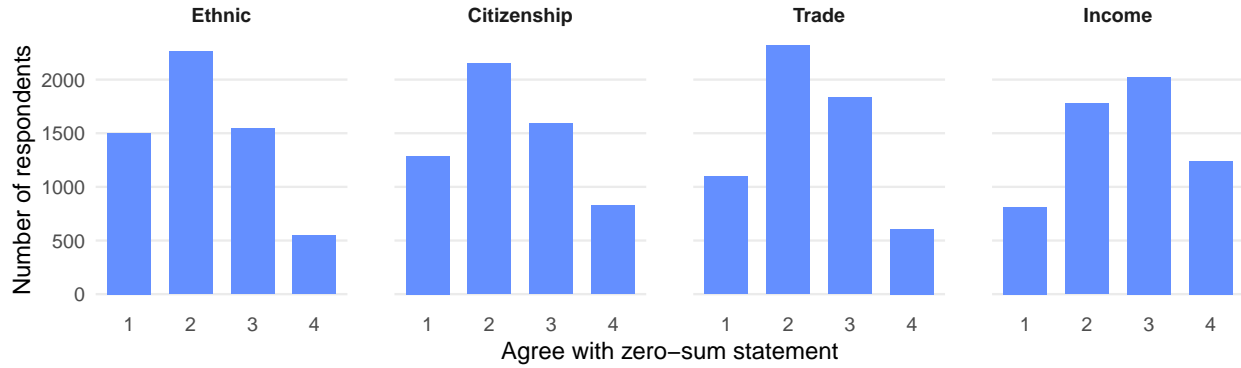


Figure E1: Distributions of Responses to Zero-Sum Questions

Notes: The figure shows the distribution of responses to the two-statement zero-sum questions. Statement 2 is the more zero-sum statement, and answer options are (1) Strongly agree with 1, (2) Agree with 1, (3) Agree with 2, (4) Strongly agree with 2.

Table E1: PCA Factor Loadings: First and Second Principal Components

Question	1st PC (Eigenvalue: 1.96)	2nd PC (Eigenvalue: 0.92)
Ethnicity	0.57	-0.02
Citizenship	0.39	-0.77
Trade	0.57	0.05
Wealth	0.44	0.64

Notes: The table shows factor loadings for the first two principal components for the four component questions of the two-statement zero-sum index.

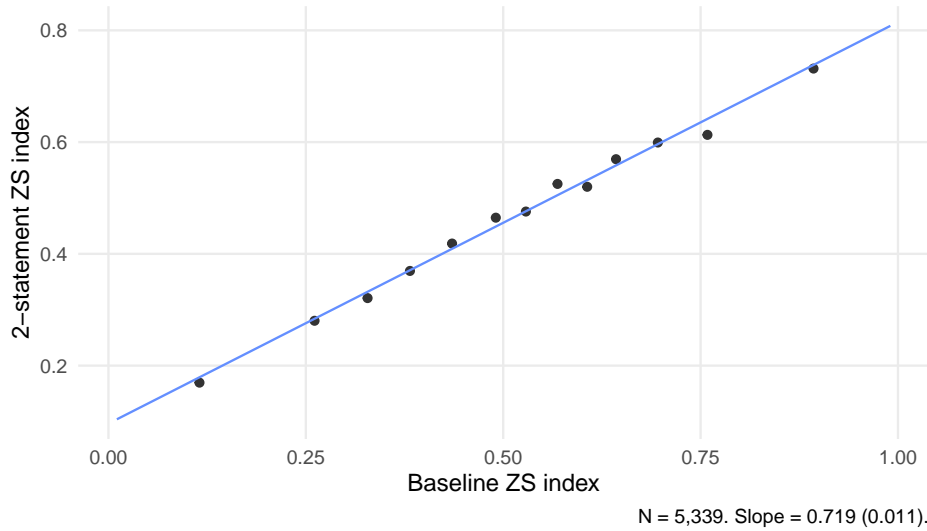


Figure E2: Relationship Between Baseline Zero-Sum Index and Two-Statement Zero-Sum Index

Notes: The figure shows a binscatter plot of the relationship between the baseline zero-sum index and the two-statement zero-sum index, measured for waves 6 and 7 of our survey sample.

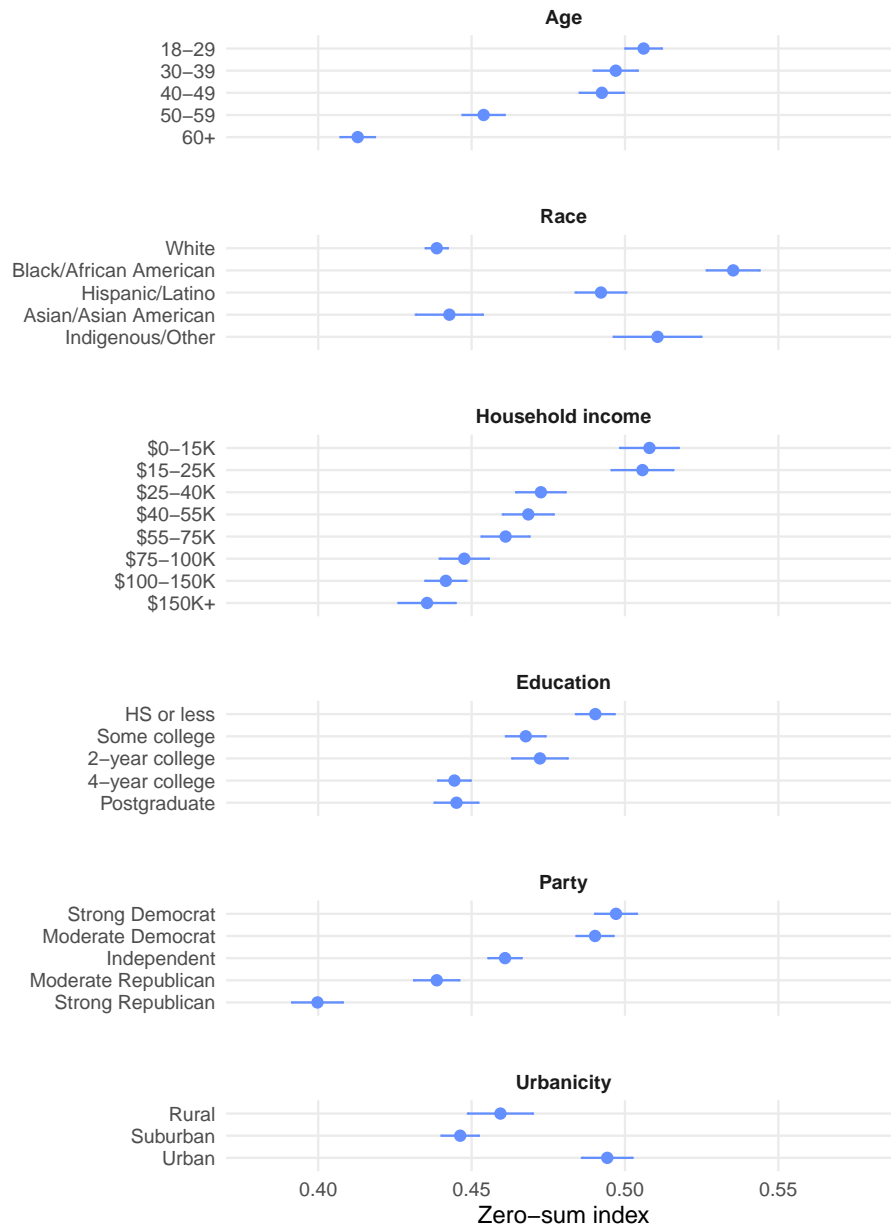


Figure E3: Average Zero-Sum Index by Demographic Group

Notes: Horizontal bars are 95% confidence intervals.

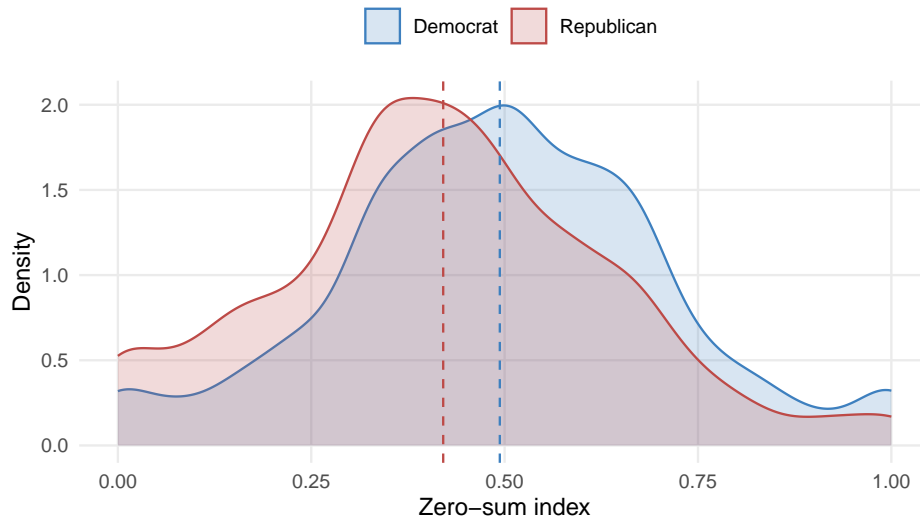


Figure E4: Density of Zero-Sum Index By Party

Notes: Vertical lines show the mean zero-sum index for each party. “Republican” includes respondents who considered themselves “Strong Republican” or “Moderate Republican”, and “Democrat” includes respondents who considered themselves “Strong Democrat” or “Moderate Democrat.” Those who considered themselves “Independent” are not shown.

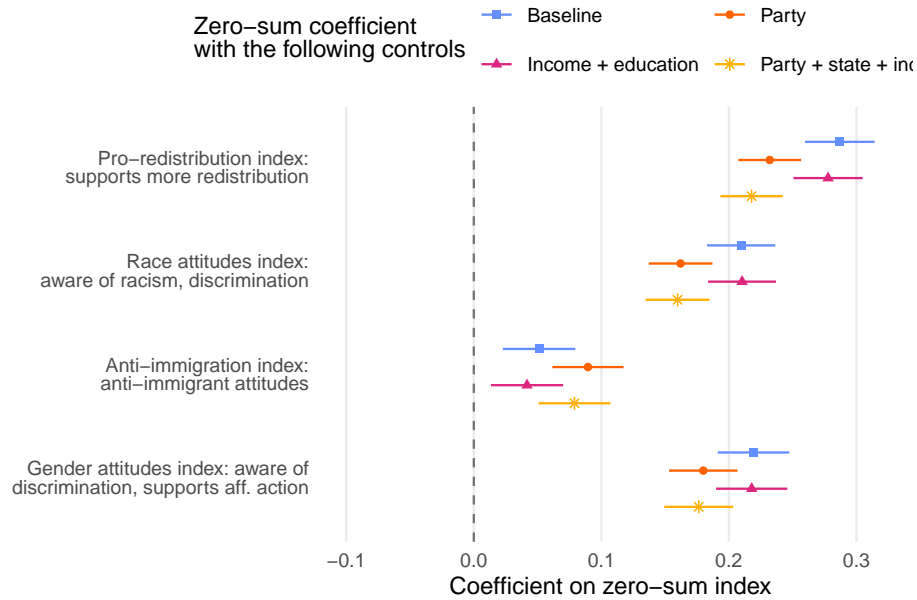


Figure E5: Zero-Sum Thinking and Policy Views

Notes: Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, as well as whether the respondent was born in the United States, wave fixed effects, and race fixed effects. The four estimates for each outcome in each column correspond to the baseline specification, as well as specifications that add (1) income and education, (2) party, and (3) income, education, party, and current state fixed effects. Outcomes and regressors are standardized to have mean zero and standard deviation one. Horizontal bars are 95% confidence intervals.



Figure E6: Zero-Sum Thinking and Policy Views, Controlling For Other Core Beliefs

Notes: Each coefficient is from a separate regression with controls for age, gender, and their interaction, as well as whether the respondent was born in the United States and fixed effects for survey wave, race, party, household income, education, and current state. The two estimates for each outcome correspond to the baseline specification, as well as specifications that add to the regression a measure of another core belief or attitude: whether the respondent thinks luck is more important than effort, their perceptions of economic mobility, the degree to which they are a moral universalist, whether they think tradition is important, and whether they think people can generally be trusted. For each combination of outcome and control variable, the baseline regression is restricted to observations without the control missing, so that each pair of coefficients is estimated on the same sample. Outcomes, regressors, and measures of other attitudes are standardized to have mean zero and standard deviation one. Index measures are the first principal component of the relevant questions. Horizontal bars are 95% confidence intervals.

## **Appendix F. Real-Stakes Questions**

In the final wave of our survey, we asked three questions with monetary incentives or “real stakes” (Stantcheva, 2022) to encourage respondents to report their perceptions accurately and to ensure that our measure of zero-sum thinking reflects respondents’ real-world behavior.

### **Incentivized zero-sum question**

First, we informed respondents that if they answered the following question correctly, they would be entered in a lottery to win a \$1,000 bonus:

*Over the last 50 years, the income of the richest 1% of individuals in the U.S. (the top 1%) has increased more than four times (400%). A recent academic study examined how much of the increase in income of the top 1% came at the expense of the income of the poorest 50% of individuals in the U.S. (the bottom 50%). We want to know your best guess about the finding of this study.*

Respondents could answer that “some” or “none” of the increase in the income of the top 1% over the last 50 years has come at the expense of the income of the poorest 50% in the U.S. The academic study referred to in the question is Piketty et al. (2014).

Most people – 84.7% of respondents – chose the correct answer, “some.” Table F1 shows that those who chose this answer were also more zero-sum on average, more pro-redistribution, and were more aware of racism and discrimination. These correlations hold with baseline demographic controls as well as party fixed effects. We take this as evidence that the zero-sum perceptions measured by our baseline questions reflect respondents’ true beliefs, and that these perceptions are indeed correlated with policy views.

### **Donation to racial justice charities**

Second, we informed respondents that they had automatically been entered into another lottery to win an additional \$1,000, but that they could choose to donate some or all of this bonus:

*“You can donate a part of this bonus payment (should you be selected in the lottery) to three nonprofit organizations working to advance racial equality and civil rights for people of color: Black Lives Matter, the NAACP (National Association for the Advancement of Colored People), and Color of Change. These organizations are dedicated to fighting against racial injustice.”*

Participants entered the amount that they would allocate to each of the three groups. 50.9% percent of people chose to donate a nonzero amount, and the average donation amount was \$175.



Table F2 shows that choosing to donate a nonzero amount correlates positively with the zero-sum index, pro-redistribution index, and race attitudes index; these correlations again hold within party.<sup>F1</sup> We take this as further evidence that zero-sum beliefs correspond to real-world behavior.

### **Petition to raise taxes**

Finally, we asked whether respondents were willing to sign a petition asking Congress to raise taxes on high-income households:

*Now we would like to ask you about a petition that we will send to the federal government. When the survey is complete, we will send the results to Congress, informing them what share of people who took this survey were willing to support the following petition:*

*“The wealthiest people in our country keep getting richer while working families struggle to make ends meet. Congress must raise the tax rate for high-income families to increase funding for programs that help low-income families. We need a more just tax system to build an economy that works for all of us.”*

*Do you support this petition? (You will not be asked to provide your name and your answer will remain anonymous.)*

Participants could choose “Yes” or “No”, and 79.7% of respondents indicated that they supported the petition. As seen in Table F3, support for the petition correlates positively with the zero-sum index, pro-redistribution index, and race attitudes index, and again, these correlations hold within party. We interpret this as another example that zero-sum beliefs correlate with real-world policy preferences.

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<sup>F1</sup>The relationships are similar but slightly noisier if we use the total donation amount instead of an indicator for whether the respondent chose to donate a nonzero amount.

Table F1: Incentivized Zero-Sum Question

	Zero-sum index		Pro-redistribution index		Race attitudes index	
	(1)	(2)	(3)	(4)	(5)	(6)
Correct on incentivized ZS question	0.0973*** (0.0099)	0.0916*** (0.0100)	0.1572*** (0.0112)	0.1110*** (0.0099)	0.1470*** (0.0137)	0.0885*** (0.0120)
Demographic controls	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
Party fixed effects		✓		✓		✓
Observations	2,984	2,982	2,984	2,982	2,985	2,983
R <sup>2</sup>	0.104	0.109	0.185	0.404	0.197	0.422
Dependent variable mean	0.490	0.490	0.656	0.656	0.609	0.609
Dependent variable std. dev.	0.199	0.199	0.223	0.223	0.282	0.282

Notes: The table reports OLS estimates where the unit of observation is an individual. “Correct” refers to responding that “Some of the increase in the income of the top 1% over the last 50 years has come at the expense of the income of the poorest 50% in the U.S.” Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table F2: Donation to Racial Injustice Charities

	Zero-sum index		Pro-redistribution index		Race attitudes index	
	(1)	(2)	(3)	(4)	(5)	(6)
Donated	0.0334*** (0.0072)	0.0253*** (0.0075)	0.1407*** (0.0075)	0.0820*** (0.0069)	0.1870*** (0.0094)	0.1152*** (0.0087)
Demographic controls	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
Party fixed effects		✓		✓		✓
Observations	2,980	2,978	2,980	2,978	2,980	2,978
R <sup>2</sup>	0.081	0.087	0.215	0.403	0.266	0.444
Dependent variable mean	0.490	0.490	0.656	0.656	0.608	0.608
Dependent variable std. dev.	0.199	0.199	0.223	0.223	0.282	0.282

Notes: The table reports OLS estimates where the unit of observation is an individual. “Donated” refers to choosing to donate a nonzero amount to a charity if selected in the lottery; see text for details. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table F3: Petition to Raise Tax Rate

	Zero-sum index		Pro-redistribution index		Race attitudes index	
	(1)	(2)	(3)	(4)	(5)	(6)
Supports petition	0.1243*** (0.0088)	0.1241*** (0.0097)	0.3214*** (0.0086)	0.2517*** (0.0089)	0.2782*** (0.0109)	0.1721*** (0.0109)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Party fixed effects		✓		✓		✓
Observations	2,989	2,987	2,989	2,987	2,990	2,988
R <sup>2</sup>	0.133	0.134	0.438	0.540	0.311	0.458
Dependent variable mean	0.490	0.490	0.656	0.656	0.609	0.609
Dependent variable std. dev.	0.199	0.199	0.223	0.223	0.282	0.282

*Notes:* The table reports OLS estimates where the unit of observation is an individual. “Supports petition” refers to being willing to support a petition to raise the tax rate for high-income families. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

## Appendix G. Survey questionnaire

By default, the questions were asked in all survey waves. Brackets indicate variations in the questions between survey waves, where [WX] means that a given question or answer choice was used in the survey wave X and [WX-WY] means it was used in survey waves X to Y.

### *Consent*

1. **We are a group of non-partisan academic researchers.** Our goal is to understand how the external environment of an individual and their ancestors influences their views on policies. By completing this survey, you are contributing to our knowledge as a society. The survey also gives you an opportunity to express your own views. If you do not feel comfortable with any question, you can skip it.

Please note that it is very important for the success of our research that you **answer honestly** and **read the questions very carefully** before answering. Please be sure to spend enough time reading and understanding each question. To ensure the quality of survey data, your responses will be subject to sophisticated statistical control methods, which can detect incoherent or rushed answers. **Responding without adequate effort or skipping many questions may result in your responses being flagged for low quality and you may not receive your payment.** It is also very important for the success of our research project that you **complete the entire survey** once you have started. This survey should take (on average) about 25 minutes to complete.

Notes: Your participation in this study is purely voluntary. Your name will never be recorded by researchers. Results may include summary data, but you will never be identified. The data will be stored on Harvard servers and will be kept confidential. The collected anonymous data may be made available to other researchers for replication purposes. Please print or take a screenshot of this page for your records. If you have any question about this study, you may contact us at [socialsciencestudies@gmail.com](mailto:socialsciencestudies@gmail.com). For any question about your rights as a research participant you may contact [cuhs@harvard.edu](mailto:cuhs@harvard.edu).

*Yes, I would like to take part in this study, and confirm that I am 18 or older; No, I would not like to participate*

### *Basic Demographics*

2. What is your gender?  
*Male; Female; Other gender identity*
3. What is your year of birth?  
*[text box]*
4. What was your **TOTAL household income, before taxes**, last year (2021)?
  - \$0 - \$14,999
  - \$15,000 - \$24,999
  - \$25,000 - \$39,999
  - \$40,000 - \$54,999
  - \$55,000 - \$74,999
  - \$75,000 - \$99,999
  - \$100,000 - \$149,999
  - \$150,000+
5. In which U.S. state do you currently live?  
*[dropdown menu]*
6. Which one of these best describes your ethnicity/race?  
*European American/White; African American/Black; Hispanic/Latino; Asian/Asian American; Native Hawaiian or Other Pacific Islander; American Indian or Alaska Native; Other [text box]*
7. [W5-W7] Would you describe the area in which you live as:  
*Urban; Suburban; Rural*

### *Own demographics: location questions*

8. Were you born in the United States?  
*Yes; No*

9. (If "No" to Q8) In what country were you born? Note: to use this dropdown menu, simply type the first letters and the country will appear automatically.  
*[dropdown menu]*
10. (If "Yes" to Q8) In which US state were you born? Note: to use this dropdown menu, simply type the first letters and the state will appear automatically.  
**N.B.** For all questions where a respondent is asked where they or a family member "primarily" lived, the question is followed by the statement: "*If you lived in multiple locations, please choose the location where you lived for the longest period of time.*"
11. Between the age of 0 and 9, did you primarily live in the United States?  
*Yes; No*
12. (If "No" to Q11) In what country did you primarily live between the age of 0 and 9?  
*[dropdown menu]*
13. (If "Yes" to Q11) In which state did you primarily live between the age of 0 and 9?  
*[dropdown menu]*
14. (If "Yes" to Q11) In which town did you primarily live between the age of 0 and 9?  
*[text box]*
15. Between the age of 10 and 19, did you primarily live in the United States?  
*Yes; No*
16. (If "No" to Q15) In what country did you primarily live between the age of 10 and 19?  
*[dropdown menu]*
17. (If "Yes" to Q15) In which state did you primarily live between the age of 10 and 19?  
*[dropdown menu]*
18. (If "Yes" to Q15) In which town did you primarily live between the age of 10 and 19?  
*[text box]*
19. (If  $\leq 1999$  to Q3) Did you primarily live in the United States in your 20s?  
*Yes; No*
20. (If "No" to Q19) In what country did you primarily live in your 20s?  
*[dropdown menu]*
21. (If "Yes" to Q19) In which state did you primarily live in your 20s?  
*[dropdown menu]*
22. (If "Yes" to Q19) In which town did you primarily live in your 20s?  
*[text box]*
23. [W1-W4] (If  $\leq 1989$  to Q3) Did you primarily live in the United States in your 30s?  
*Yes; No*
24. [W1-W4] (If "No" to Q23) In what country did you primarily live in your 30s?  
*[dropdown menu]*
25. [W1-W4] (If "Yes" to Q23) In which state did you primarily live in your 30s?  
*[dropdown menu]*
26. [W1-W4] (If "Yes" to Q23) In which town did you primarily live in your 30s?  
*[text box]*
27. [W1-W4] (If  $\leq 1979$  to Q3) Did you primarily live in the United States in your 40s and after?  
*Yes; No*
28. [W1-W4] (If "No" to Q27) In what country did you primarily live in your 40s and after?  
*[dropdown menu]*
29. [W1-W4] (If "Yes" to Q27) In which state did you primarily live in your 40s and after?  
*[dropdown menu]*
30. [W1-W4] (If "Yes" to Q27) In which town did you primarily live in your 40s and after?  
*[text box]*

***Own demographics, cont.***

31. [W5-W7] How many children did your parents have?  
*1; 2; 3; 4; 5; 6; 7; 8; 9; 10 or more*

32. Are/were your parents divorced?  
*Yes; No*
33. (If "Yes" to Q32) How old were you when your parents divorced?  
*[text box]*
34. (If "Yes" to Q32) With whom were you primarily living after your parents divorced?  
*Mother; Father; Other*
35. Please indicate your marital status.  
*Never Married; Married; Legally Separated or Divorced; Widowed*
36. How many children do you have?  
*0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10 or more*
37. What is your ancestry or ethnic origin? For example: Italian, Jamaican, African Am., Cambodian, Cape Verdean, Norwegian, Dominican, French Canadian, Haitian, Korean, Lebanese, Polish, Nigerian, Mexican, Taiwanese, Ukrainian, and so on. You should indicate all that apply.  
*[text box]*
38. Which category best describes your highest level of education?  
*No high school; Some high school; High school degree/GED; Some college; 2-year college degree; 4-year college degree; Master's degree, MBA; PhD, JD, MD*
39. What is your current employment status?  
*Full-time employee; Part-time employee; Self-employed or small business owner; Unemployed and looking for work; Unemployed and not looking for work (including student)*
40. (If "Unemployed and not looking for work (including student) to Q39") What is your current status?  
*Student; Retired; Full-time parent; Stay-at-home wife/husband; Disabled*
41. [W6-W7] What is/was your occupation?  
*[text box]*
42. [W6-W7] Which category best describes your occupation?
- *Farmer or agricultural laborer, rancher, fisher*
  - *Manual laborer (e.g. factory worker, miner)*
  - *Tradesperson (e.g. mechanic, welder, painter, railroad worker, plumber, tailor)*
  - *Service worker (e.g. driver, waiter, cook, retail worker, cashier, barber, janitor, housekeeper)*
  - *Clerical worker (e.g. secretary, bookkeeper, receptionist, telephone operator)*
  - *White-collar worker (e.g. manager, executive, businessperson, salesperson, accountant, banker)*
  - *Professional (e.g. doctor, lawyer, engineer, IT/computer programmer)*
  - *Medical or social worker (e.g. nurse, EMT, pharmacist)*
  - *Protective service worker (e.g. police, fire)*
  - *Educational service worker (e.g. teacher, professor)*
  - *Public servant (e.g. bureaucrat, politician, military)*
  - *Homemaker/stay-at-home parent*
  - *Self-employed/small business owner (excluding farm owners)*
  - *Other (please specify) [text box]*
  - *Don't know*
43. [W5-W7] What is your present religion, if any?
- *Protestant (for example, Baptist, Methodist, Non-denominational, Lutheran, Presbyterian, Pentecostal, Episcopalian, Reformed, Church of Christ, etc.)*
  - *Roman Catholic*
  - *Mormon (Church of Jesus Christ of Latter-day Saints)*
  - *Orthodox (such as Greek, Russian, or some other Orthodox church)*
  - *Jewish*
  - *Muslim*
  - *Buddhist*
  - *Hindu*
  - *Atheist (believes God does not exist)*
  - *Agnostic (does not know whether God exists or not)*
  - *Other [text box]*
44. [W5-W7] How important is religion in your life?  
*Very important; Somewhat important; Not too important; Not at all important*

## ***Political views***

45. In politics, as of today, do you consider yourself a Republican, a Democrat, or an independent?  
*Strong Democrat; Moderate Democrat; Independent; Moderate Republican; Strong Republican; Other [text box]*
46. Who did you vote for in the 2016 election?  
*Hillary Clinton; Donald Trump; Other [text box]; I did not vote*
47. (If "I did not vote" to Q46) Who would you have voted for in the 2016 election if you had voted?  
*Hillary Clinton; Donald Trump; Other [text box]*
48. [W4-W7] Who did you vote for in the 2020 election?  
*Joe Biden; Donald Trump; Other [text box] I did not vote*
49. [W5-W7] (If "I did not vote" to Q48) Who would you have voted for in the 2020 election if you had voted?  
*Joe Biden; Donald Trump; Other [text box]*
50. On economic policy matters, where do you see yourself on the liberal/conservative spectrum?  
*Very liberal, Liberal, Moderate, Conservative, Very conservative*

## ***Parents' demographics***

**N.B.** The brackets indicate that we asked the demographic questions in this section for the respondent's father and mother.

*Now we'd like you to think of your [father/mother]. We are going to ask you questions about [him/her]. Please answer as best as you can. If you have **absolutely** no idea about the answer, you can leave it blank. Otherwise, please answer as accurately as you are able to.*

51. [W4-W7] Is your [father/mother] currently alive?  
*Yes; No; Don't know*
52. [W4-W7] (If "Yes" to Q51) What is the age of your [father/mother]?  
*[text box]*
53. [W4-W7] (If "Yes" to Q51 and no response to Q52) What is the year of birth of your [father/mother]?  
*[text box]*
54. [W4-W7] (If "No" to Q51) In what year did [he/she] die?  
*[text box]*
55. [W4-W7] (If "No" to Q51) How old was he when [he/she] died?  
*[text box]*
56. [W4-W7] (If "No" to Q51 and no response to Q54 or Q55 ) What is the year of birth of your [father/mother]?  
*[text box]*

**N.B.** For all following questions that ask about where a person spent their time, the respondent is presented the instruction to select the location where the person spent most of their time.

57. [W1-W4] Was your [father/mother] born in the United States?  
*[Yes; No; Don't know]*
58. [W1-W4] (If "No" to Q57) In what country was your [father/mother] born?  
*[dropdown]*
59. [W1-W4] (If "Yes" to Q57) In which state was your [father/mother] born?  
*[dropdown]*
60. [W1-W4] (If "Yes" to Q57) In which town was your [father/mother] born?  
*[text box]*
61. Did your [father/mother] primarily grow up (age 7-17) in the United States?  
*Yes; No; Don't know*
62. (If "No" to Q61) In what country did you [father/mother] primarily grow up?  
*[dropdown menu]*
63. (If "Yes" to Q61) In which state did your [father/mother] primarily grow up?  
*[dropdown menu]*
64. (If "Yes" to Q61) In which town did your [father/mother] primarily grow up?  
*[text box]*
65. Which category best describes your [father's/mother's] highest level of education?  
*No high school; Some high school; High school degree/GED; Some college; 2-year college degree; 4-year college degree; Master's degree, MBA; PhD, JD, MD; Don't know*

66. What was/is the occupation of your [father/mother] as an adult?  
[text box]
67. [W5-W7] Which category best describes your [father's/mother's] occupation?
- Farmer or agricultural laborer, rancher, fisher
  - Manual laborer (e.g. factory worker, miner)
  - Tradesperson (e.g. mechanic, welder, painter, railroad worker, plumber, tailor)
  - Service worker (e.g. driver, waiter, cook, retail worker, cashier, barber, janitor, housekeeper)
  - Clerical worker (e.g. secretary, bookkeeper, receptionist, telephone operator)
  - White-collar worker (e.g. manager, executive, businessperson, salesperson, accountant, banker)
  - Professional (e.g. doctor, lawyer, engineer, IT/computer programmer)
  - Medical or social worker (e.g. nurse, EMT, pharmacist)
  - Protective service worker (e.g. police, fire)
  - Educational service worker (e.g. teacher, professor)
  - Public servant (e.g. bureaucrat, politician, military)
  - Homemaker/stay-at-home parent
  - Self-employed/small business owner (excluding farm owners)
  - Other (please specify) [text box]
  - Don't know
68. **Before proceeding to the next set of questions, we want to ask for your feedback about the responses you provided so far.** It is vital to our study that we only include responses from people who devoted their full attention to this study. This will not affect in any way the payment you will receive for taking this survey. In your honest opinion, should we use your responses, or should we discard your responses since you did not devote your full attention to the questions so far?
- Yes, I have devoted full attention to the questions so far and I think you should use my responses for your study.
  - No, I have not devoted full attention to the questions so far and I think you should not use my responses for your study.

### **Grandparents' demographics**

**N.B.** For the demographic questions below, the brackets indicate that we asked these questions for the paternal grandfather, paternal grandmother, maternal grandfather, and maternal grandmother, and that each of these was defined. For example, "maternal grandmother" was defined as the "mother of your mother."

Now we'd like you to think of your [paternal/maternal] [grandfather/grandmother]. We are going to ask you questions about [him/her]. Please answer as best as you can. If you have **absolutely** no idea about the answer, you can leave it blank. Otherwise, please answer as accurately as you are able to.

69. [W4-W7] Is your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother]) currently alive?  
Yes; No; Don't know
70. [W4-W7] (If "Yes" to Q69) What is the age of your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother])?  
[text box]
71. [W4-W7] (If "Yes" to Q69 and no response to Q70) What is the year of birth of your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother])?  
[text box]
72. [W4-W7] (If "No" to Q69) In what year did [she/he] die?  
[text box]
73. [W4-W7] (If "No" to Q69) How old was he when [she/he] died?  
[text box]
74. [W4-W7] (If "No" to Q69 and no response to Q72 or Q73) What is the year of birth of your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother])?  
[text box]
75. Did your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother]) primarily grow up (age 7-17) in the United States?  
Yes; No; Don't know



76. (If "No" to Q75) In what country did your **[paternal/maternal] [grandfather/grandmother]** ([father/mother] of your [father/mother]) primarily grow up?  
[dropdown menu]
77. (If "Yes" to Q75) In which state did your **[paternal/maternal] [grandfather/grandmother]** ([father/mother] of your [father/mother]) primarily grow up?  
[dropdown menu]
78. (If "Yes" to Q75) In which town did your **[paternal/maternal] [grandfather/grandmother]** ([father/mother] of your [father/mother]) primarily grow up?  
[text box]
79. Which category best describes the highest level of education of your **[paternal/maternal] [grandfather/grandmother]** ([father/mother] of your [father/mother])?  
*No schooling; Some primary school; Completed primary school; Some high school; High school degree/GED; Some college or more; I don't know*
80. What was the occupation of your **[paternal/maternal] [grandfather/grandmother]** ([parent of your parent]) as an adult?  
[text box]
81. [W5-W7] Which category best describes your **[paternal/maternal] [grandfather/grandmother's]** occupation?
- *Farmer or agricultural laborer, rancher, fisher*
  - *Manual laborer (e.g. factory worker, miner)*
  - *Tradesperson (e.g. mechanic, welder, painter, railroad worker, plumber, tailor)*
  - *Service worker (e.g. driver, waiter, cook, retail worker, cashier, barber, janitor, housekeeper)*
  - *Clerical worker (e.g. secretary, bookkeeper, receptionist, telephone operator)*
  - *White-collar worker (e.g. manager, executive, businessperson, salesperson, accountant, banker)*
  - *Professional (e.g. doctor, lawyer, engineer, IT/computer programmer)*
  - *Medical or social worker (e.g. nurse, EMT, pharmacist)*
  - *Protective service worker (e.g. police, fire)*
  - *Educational service worker (e.g. teacher, professor)*
  - *Public servant (e.g. bureaucrat, politician, military)*
  - *Homemaker/stay-at-home parent*
  - *Self-employed/small business owner (excluding farm owners)*
  - *Other (please specify) [text box]*
  - *Don't know*
82. How many children did your [paternal/maternal] grandparents (your [father's/mother's] parents) have?  
*1; 2; 3; 4; 5; 6; 7; 8; 9; 10 or more; Don't know*

### ***Family's veteran status***

83. Have you, or have any of your parents, grandparents or children ever served in the U.S. Armed Forces as either an active duty or reserve member (including the Army, Navy, Marine Corps, Air Force, Army Air Corps, National Guard, and Coast Guard)? Check all that apply.  
*Myself; My spouse; My father; My mother; My paternal grandfather (father of my father); My paternal grandmother (mother of my father); My maternal grandfather (father of my mother); My maternal grandmother (mother of my mother); My son/daughter; None; Don't know*
84. [W1-W4] (If "None" or "I don't know" is not selected for Q83) Do you, or does anyone in your family have veteran status? If yes, check all that apply.  
*Myself; My father; My mother; My paternal grandfather (father's father); My paternal grandmother (father's mother); My maternal grandfather (mother's father); My maternal grandmother (mother's mother); My son/daughter; None; I don't know*
85. [W1-W4] (If "None" or "I don't know" is not selected for Q83) Did any of your grandparents serve on active duty in World War II? If yes, check all that apply.  
*My paternal grandfather (father's father); My paternal grandmother (father's mother); My maternal grandfather (mother's father); My maternal grandmother (mother's mother); None; I don't know*
86. [W1-W4] (If "None" or "I don't know" is not selected for Q83) Did any of your grandparents serve on active duty in the Korean War? If yes, check all that apply.  
*My paternal grandfather (father's father); My paternal grandmother (father's mother); My maternal grandfather (mother's father); My maternal grandmother (mother's mother); None; I don't know*

87. [W1-W4] (If "None" or "I don't know" is not selected for Q83) Did any of your grandparents serve on active duty in the Vietnam War? If yes, check all that apply  
*My paternal grandfather (father's father); My paternal grandmother (father's mother); My maternal grandfather (mother's father); My maternal grandmother (mother's mother); None; I don't know*
88. [W1-W4] (If "None" or "I don't know" is not selected for Q83) Did anyone in your family serve on active duty in the Iraq and/or Afghanistan War? If yes, check all that apply  
*My father; My mother; My paternal grandfather (father's father); My paternal grandmother (father's mother); My maternal grandfather (mother's father); My maternal grandmother (mother's mother); My son/daughter; None; I don't know*

### ***Veteran details***

**N.B.** We ask the questions below about veteran status and service history for the respondent and every family member except for son/daughter (i.e., the spouse, father, mother, paternal grandfather, paternal grandmother, maternal grandfather, and the maternal grandmother) for whom the respondent indicated that they served in the military. In the brackets, "person" indicates that the question was asked for the respondent and a given family member. The pronoun "they" in brackets means that the appropriate pronoun was used for the person in question (i.e., it stands in for "you," "she," or "he").

89. (If "None" or "Don't know" is not selected to Q83) What is/was [person's] affiliation? Check all that apply.  
*Army; Army Reserve; Navy; Navy Reserve; Marine Corps; Marine Corps Reserve; Air Force; Air Force Reserve; Coast Guard; Coast Guard Reserve; National Guard*
90. For how many years did [person] serve/have [they] served on active duty? If none, please enter "0", if less than 1 year, enter "1."  
*[text box]*
91. (If "National Guard" or a "Reserve" to Q89) For how many years did was/has [person] been in the Reserve or National Guard?  
*[text box]*
92. (If > 0 to Q90) In which year did [person's] active duty status begin?  
*[text box]*
93. Did [person] serve in any of the following conflicts?  
*World War I [for parents and grandparents only]; World War II; Korean War; Vietnam War; Persian Gulf War (Kuwait, Iraq, Operations Desert Storm/Desert Shield); Global War on Terrorism (Afghanistan/Iraq Wars); Other [text box]*
94. (If "World War II," "Korean War," or "Vietnam War" to Q93) Was [person] drafted or did [they] volunteer?  
*Drafted, Volunteered, Don't know [for other family members only]*

### ***Enslavement history***

95. Thinking about your recent ancestors (say the last 6 or 7 generations), were any of them enslaved at any point in their life?  
*Yes; No; Don't know*
96. [W1-W4] (If "Yes" to Q95) Which of your ancestors were enslaved at some point in their life?  
*[textbox]*
97. [W5-W7] When thinking about historical episodes of enslavement, the following examples often come to mind. Which, if any, apply to your own ancestors? Check all that apply.  
*Enslavement of African descendants; Holocaust; Indentured servants; Internment of Japanese-Americans; Native American enslavement; War prisoner; Other [text box]; None; Don't know*

### ***Relative income***

**N.B.** The brackets for Q98 indicate that we ask the about the relative income for the respondent, their mother, father, paternal grandfather, paternal grandmother, maternal grandfather, and maternal grandmother.

98. **When [person] was growing up** (age 7-17), compared with other families in [person's] country back then, would you say [person's] household income was:  
*Far above average; A little above average; Average; A little below average; Far below average; I don't know*
99. **Right now**, compared with other families in America, would you say your own household income is:  
*Far above average; A little above average; Average; A little below average; Far below average; I don't know*

## Perceptions of fairness and mobility

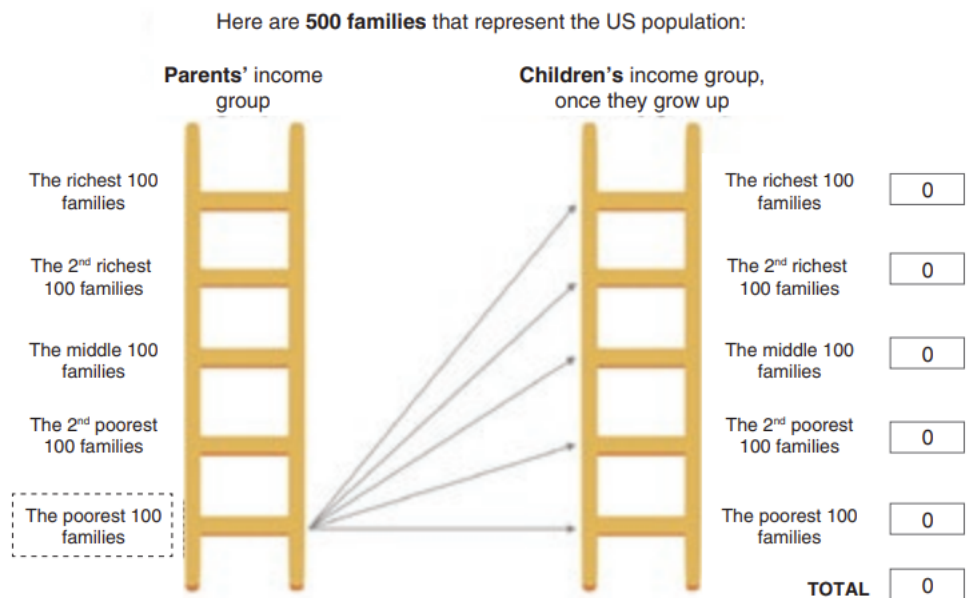
100. Please tell us whether you agree with the following statement: "Success in life is pretty much determined by forces outside our control."  
*Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree*
101. Please tell us whether you agree with the following statement: "In the United States everybody has a chance to make it and be economically successful."  
*Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree*
102. Which has more to do with why a person is poor?  
*Lack of effort on their own part; Circumstances beyond their control*
103. [W1-W4] Which has more to do with why a person is rich?  
*the person worked harder than others; The person had more advantages than others*
104. **We would now like to ask you what you think about the life opportunities of children from very poor families.**

For the following questions, we focus on 500 families that represent the U.S. population. We divide them into five groups on the basis of their income, with each group containing 100 families. These groups are: the poorest 100 families, the second poorest 100 families, the middle 100 families, the second richest 100 families, and the richest 100 families.

Please fill out the entries to the right of the figure below to tell us, in your opinion, how many out of 100 children coming from the **poorest** 100 families will grow up to be in each income group.

From our experience, this question takes some time to answer.

Please note that your entries need to add up to 100 or you will not be able to move on to the next page.

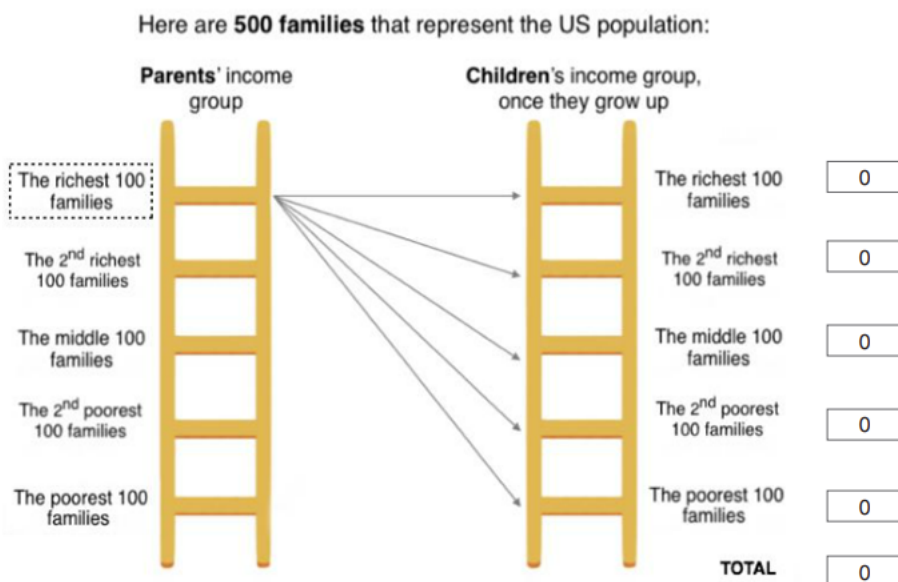


105. [W1-W4] Do you think that a child from the **poorest** 100 families will grow up to be among the **richest 100 families** are:  
*Close to zero; Low; Fairly low; Fairly high; High*
106. [W1-W4] Do you think that a child from the **poorest** 100 families will grow up to be among the **second richest 100 families** are:  
*Close to zero; Low; Fairly low; Fairly high; High*
107. [W1-W4] **We are still interested in your opinion about the life opportunities for children from different backgrounds, but now we focus on children from very rich families.**

From our experience, this question takes some time to answer.

Consider 100 children coming from the richest 100 families.

Please fill out the entries to the right of the figure below to tell us, in your opinion, how many out of these 100 children will grow up to be in each income group. Please note that your entries need to add up to 100 or you will not be able to move on to the next page.



108. Please tell us whether you agree with the following statement: "People should be allowed to accumulate as much wealth as they can even if some make millions while others live in poverty."  
*Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree*
109. Thinking about your past achievements, do you believe that your hard work and effort in life have paid off or not?  
*They have paid off a lot; They have paid off somewhat; They have not paid off at all*
110. [W1-W4] Thinking about your future achievements, do you believe that your hard work in life will pay off or not?  
*[They will pay off a lot; They will pay off somewhat; They will not pay off at all]*
111. [W1-W4] (If  $\geq 1975$  to Q3) Thinking of yourself, how likely is it that you will ever be among the top 20% richest household in the U.S., i.e., households which earn more than \$130,000 per year?  
*Very likely; Likely; Somewhat likely; Not likely; Not likely at all*
112. [W1-W4] (If  $< 1975$  to Q3 and  $< 0$  to Q36) Thinking of your children, how likely is it that they will ever be among the top 20% richest household in the U.S., i.e., households which earn more than \$130,000 per year?  
*Very likely; Likely; Somewhat likely; Not likely; Not likely at all*

### Views about redistribution

113. Let's think about the role of the government when it comes to **large income differences** between rich and poor people. Think of a scale where:
- 1 means that the government **should not concern itself** with reducing income differences between rich and poor people
  - 7 means that the government **should do everything in its power** to reduce income differences between rich and poor people

What score between 1 and 7 comes closest to the way you feel?

1; 2; 3; 4; 5; 6; 7

114. Some people think that the government should not concern itself with making the **opportunities for children** from poor and rich families more equal. Others think that the government should do everything in its power to make the opportunities for children from poor and rich families more equal.

Think of a scale where:

- 1 means that the government **should not concern** itself with making the opportunities for children from poor and rich families more equal
- 7 means that the government **should do everything in its power** to reduce this inequality of opportunities

What score between 1 and 7 comes closest to the way you feel?

1; 2; 3; 4; 5; 6; 7

115. Please tell us if you think that **upper-income people** are paying their fair share in federal taxes, paying too much, or paying too little.  
*Too much; Fair share; Too little*
116. Please tell us if you think that **low-income people** are paying their fair share in federal taxes, paying too much, or paying too little.  
*Too much; Fair share; Too little*
117. Here are several things that the local, state, or federal government might spend more funds on. Please indicate if you favor or oppose them. Keep in mind that **in order to finance an expansion of any of these programs, other types of spending would have to be scaled down or taxes would have to be raised.**

	Strongly favor	Favor	Indifferent	Oppose	Strongly oppose
Increasing income support for the poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[W1-W4] Improving the conditions of the poorest neighborhoods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[W1-W4] Helping low income households pay for their health insurance and health care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spending more on defense and national security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spending more on infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### ***Petition***

118. [W7] Now we would like to ask you about a petition that we will send to the federal government. When the survey is complete, we will send the results to Congress, informing them what share of people who took this survey were willing to support the following petition:  
 “The wealthiest people in our country keep getting richer while working families struggle to make ends meet. Congress must raise the tax rate for high-income families to increase funding for programs that help low-income families. We need a more just tax system to build an economy that works for all of us.”  
 Do you support this petition? (You will not be asked to provide your name and your answer will remain anonymous.)  
*Yes; No*

### ***Views***

*Now we'd like you to tell us your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between.*

119. [W5-W7]
- *Left:* It **is** important to follow the traditions and customs that are passed down by one's community or family over time.
  - *Right:* It **is not** important to follow the traditions and customs that are passed down by one's community or family over time.
- 1 (agree with left); 2; 3; 4; 5; 6; 7; 8; 9; 10 (agree with right)*
120. [W5-W7]
- *Left:* People can only get rich at the expense of others
  - *Right:* Wealth can grow so there's enough for everyone.
- 1 (agree with left); 2; 3; 4; 5; 6; 7; 8; 9; 10 (agree with right)*
121. [W5] In the last decade, the salaries of CEOs have grown much faster than the salaries of average workers.

- *Left:* These gains in CEO salaries **have been** at the expense of the salaries of average workers.
- *Right:* These gains in CEO salaries **have not been** at the expense of the salaries of average workers.

1 (agree with left); 2; 3; 4; 5; 6; 7; 8; 9; 10 (agree with right)

122. [W5] Since the 1960s, the average wages of women have risen relative to the wages of men.

- *Left:* Women's wage gains **have been** at the expense of men's wages.
- *Right:* Women's wage gains **have not been** at the expense of men's wages.

1 (agree with left); 2; 3; 4; 5; 6; 7; 8; 9; 10 (agree with right)

### **Views about government**

123. How often do you think you can trust the government to do what is right?

*Never; Some of the time; Most of the time; Always*

124. [W5-W7] Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?

*Most people can be trusted; Need to be very careful; Don't know*

125. *We are interested in whether you are paying attention to the survey. To show that you are reading the full set of instructions, just go ahead and select both strongly agree and strongly disagree among the alternatives below, no matter what your opinion is.*

**Please tell us whether you agree with the following statement:**

*"It is easy to find accurate and reliable information in the media these days".*

*Strongly agree, Agree, Disagree, Strongly disagree*

### **Views about race**

126. *Please tell us whether you agree with the following statement: "It's really a matter of some people not trying hard enough; if Black people would only try harder, they could be just as well off as white people"*

*Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree*

127. Do you believe racism in the US is:

*Not a problem at all; A small problem; A problem; A serious problem; A very serious problem*

128. *Please tell us whether you agree or disagree with the following statement: "Generations of slavery and discrimination have created conditions that make it difficult for Black people to work their way out of the lower class."*

*Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree*

129. [W1-W4] Please, tell us whether you agree or disagree with the following statement: "The Irish, Italians, Jews, and many other minorities overcame prejudice and worked their way up. Today's immigrants should do the same without any special favors"

*Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree*

130. [W1-W4] How often do you think that Black people experience discrimination or are hassled or made to feel inferior because of their race?

*[Very often; Often; Sometimes; Never]*

131. [W1-W4] During interactions with the police, how often do you think that Black people experience discrimination or are hassled or made to feel inferior because of their race?

*Often; Sometimes; Never*

### **Donation**

132. [W7] **By taking this survey, you are automatically entered into a lottery to win a \$1,000 bonus, which is 1,000,000 points.** A few days after the survey is complete, you will know whether you have been selected in the lottery. The payment will be made to you in the same way as your compensation for this survey, so no further action is required on your part.

You can donate a part of this bonus payment (should you be selected in the lottery) to **three nonprofit organizations** working to advance racial equality and civil rights for people of color: Black Lives Matter, the NAACP (National Association for the Advancement of Colored People), and Color of Change. These organizations are dedicated to fighting against racial injustice.

Should you win the lottery, please enter the amounts you would like to donate **to each group**. The total amount you donate can be any number between 0 and \$1,000 and the rest of the bonus would be paid to you. **The amounts you choose to donate do not affect your chance of winning the lottery.**

- [text box] *Black Lives Matter*
- [text box] *National Association for the Advancement of Colored People (NAACP)*
- [text box] *Color of Change*

### **Views about migration**

133. What do you think will happen as a result of more immigrants coming to this country? Is each of these possible results very likely, somewhat likely, not too likely, or not at all likely?

	Very likely	Somewhat likely	Not too likely	Not at all likely
Higher economic growth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Higher unemployment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making it harder to keep the country united	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Higher crime rates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making the country more open to new ideas and cultures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People born in the US losing their jobs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

134. Some people think that the government (at the local, state, or federal level) should only support people who were born in the U.S. Others think that the government should care equally about all the people living in the country, regardless of their country of origin and regardless of whether they are born in the U.S. Think of a scale where:

- 1 means that the government should focus on supporting people **born in the U.S.**
- 7 means that the government should care **equally about everyone.**

What score between 1 and 7 comes closest to the way you feel?

1; 2; 3; 4; 5; 6; 7

135. Do you think the number of immigrants from foreign countries who are permitted to come to the United States to live should be increased a lot, increased a little, left the same as it is now, decreased a little, or decreased a lot?

*Increased a lot; Increase a little; Same as now; Decreased a little; Decreased a lot*

### **Views about gender**

136. Some people say that because of past discrimination, women should be given preference in hiring and promotion. Others say that such preference in hiring and promotion of women is wrong because it discriminates against men. What about your opinion – are you for or against preferential hiring and promotion of women?  
*Strongly in favor; In favor; Neither in favor nor against; Against; Strongly against*

137. How often do you think that women experience discrimination or are hassled or made to feel inferior because of their gender?

*Very often; Often; Sometimes; Never*

### **Views about gun ownership**

138. In general, do you feel that the laws covering the sale of firearms should be made more strict, less strict, or kept as they are?

*More strict; Less strict; Kept as they are*

### **Views about universal health care**

139. Do you favor/oppose publicly supported universal health insurance for all Americans (with the possibility to still purchase extra private insurance)?

*Favor a great deal; Favor moderately; Favor a little; Oppose a little; Oppose moderately; Oppose a great deal*

### Views about patriotism

140. Some people say the following things are important for being truly American. Others say they are not important. How important do you consider each of the following?

	Very important	Fairly important	Not very important	Not important at all
To have been born in America	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[W1-W4] To have American citizenship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[W1-W4] To have lived in America for most of one's life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[W1-W4] To be able to speak English	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be a Christian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

141. How much do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
[W1-W4] I would rather be a citizen of America than of any other country in the world	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are some things about America today that make me feel ashamed of America	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[W1-W4] People should support their country even if the country is in the wrong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

142. [W1-W3] How much do you agree or disagree with the following statements?

	Extremely important	Very important	Moderately important	Somewhat important	Not too important
Freedom is having a government that doesn't control me or interfere in my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Freedom is having the right to participate in politics and elections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Freedom is having the power to choose what I want in life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Freedom is being able to express unpopular ideas without fearing for my safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Zero-sum mentality

Please tell us whether you agree with the following statements:

143. "In the United States, there are many different ethnic groups (Black, White, Asian, Hispanic, etc.). If one ethnic group becomes richer, this generally comes at the expense of other groups in the country."  
*Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree*
144. "In international trade, if one country makes more money, then it is generally the case that the other country makes less money."  
*Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree*
145. "In the United States, there are those with American citizenship and those without. If those without American citizenship do better economically, this will generally come at the expense of American citizens."  
*Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree*
146. "In the United States, there are many different income classes. If one group becomes wealthier, it is usually the case that this comes at the expense of other groups."  
*Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree*



**Happiness**

147. All things considered, how satisfied are you with your life as a whole these days?  
 10 (Completely satisfied); 9; 8; 7; 6; 7; 5; 4; 3; 2; 1 (Completely dissatisfied)

**Mental health**

148. [W1-W4] Over the last 2 weeks, how often have you been bothered by the following problems?

	Not at all	Several days	More than half the days	Nearly every day
Not been able to stop or control worrying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experienced feeling down, depressed or hopeless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Universalism**

For the following questions, imagine that you are given \$100 to split between two people. You must give away the full amount and you cannot keep any for yourself. Please note that the two values need to add up to 100 or you will not be able to move on.

149. [W5-W7] How would you split \$100 between a member of one of your past or current organizations (local church, club, association, etc.) and a randomly-selected person who lives in the United States?
- [text box] A member of one of your organizations;
  - [text box] A randomly-selected U.S. person
150. [W5-W7] How would you split \$100 between a randomly-selected person who lives anywhere in the world and a randomly-selected person who lives in the United States?
- [text box] A randomly-selected person from anywhere in the world;
  - [text box] A randomly-selected U.S. person

**Open-ended questions**

151. [W1-W4] In your view, what are America’s strengths?  
 [text box]
152. [W1-W4] In your view, what are America’s weaknesses?  
 [text box]

**QAnon and Capitol riots**

153. [W3] How many of the following things do you believe in:
- UFOs
  - Vaccinations make more harm than benefit
  - The principles of QAnon [A random selection of respondents was shown this option]
  - Life after death
  - Spirits
  - Karma
  - Global warming due to humans
- o; 1; 2; 3; 4; 5; 6; [7]
154. [W3, W6] Do you think that QAnon contains some truths about US politics?  
 Yes, it definitely does; Yes, probably does; Uncertain one way or the other; No, probably does not; No, definitely does not; I don't know what QAnon is
155. [W3, W6] On a scale of 1 to 10, how sympathetic do you feel towards those who were charged for entering the U.S. Capitol building on January 6, 2021?  
 1 (Not sympathetic at all); 2; 3; 4; 5; 6; 7; 8; 9; 10 (Very sympathetic); Don't know

## **Abortion**

156. [W5-W7] Do you think abortions should be legal under any circumstances, legal only under certain circumstances, or illegal in all circumstances?  
*Legal under any circumstances; Legal only under certain circumstances; Illegal in all circumstances*

### **Two-statement zero-sum questions**

157. [W5-W7] *The following question shows two statements that represent opposing points of view. Please choose the option that indicates which statement you agree with most and how strongly you agree.*  
Now we'd like you to think about the different ethnic groups (Black, White, Asian, Hispanic, etc.) in the United States.

- **Statement 1:** If one ethnic group becomes richer, this generally **does not come at the expense of** other ethnic groups in the country
- **Statement 2:** If one ethnic group becomes richer, this generally **comes at the expense of** other ethnic groups in the country

*Strongly agree with 1; Agree with 1; Agree with 2; Strongly agree with 2*

158. [W5-W7] *The following question shows two statements that represent opposing points of view. Please choose the option that indicates which statement you agree with most and how strongly you agree.*  
Now we'd like you to think about international trade.

- **Statement 1:** If one country makes more money, this generally **does not come at the expense of** other countries
- **Statement 2:** If one country makes more money, this generally **comes at the expense of** other countries

*Strongly agree with 1; Agree with 1; Agree with 2; Strongly agree with 2*

159. [W5-W7] *The following question shows two statements that represent opposing points of view. Please choose the option that indicates which statement you agree with most and how strongly you agree.*  
Now we'd like you to think about those with American citizenship and those without.

- **Statement 1:** If people without American citizenship do better economically, this generally **does not come at the expense of** American citizens
- **Statement 2:** If people without American citizenship do better economically, this generally **comes at the expense of** American citizens

*Strongly agree with 1; Agree with 1; Agree with 2; Strongly agree with 2*

160. [W4-W7] *The following question shows two statements that represent opposing points of view. Please choose the option that indicates which statement you agree with most and how strongly you agree.*

- **Statement 1:** Most of the wealth of the rich was created **without taking it** from others
- **Statement 2:** Most of the wealth of the rich was obtained **by taking it** from others

*Strongly agree with 1; Agree with 1; Agree with 2; Strongly agree with 2*

### **Incentivized zero-sum question**

161. [W7] **If your answer to this question is accurate, you will be entered in a second lottery to win a \$1,000 bonus, which is 1,000,000 points.** Only those who answer correctly will be part of this lottery. In a few days, you will know whether you have been selected in the lottery. The payment will be made to you in the same way as your compensation for this survey, so no further action is required on your part.

Over the last 50 years, the income of the richest 1% of individuals in the U.S. (the top 1%) has increased more than four times (400%). A recent academic study examined how much of the increase in income of the top 1% came at the expense of the income of the poorest 50% of individuals in the U.S. (the bottom 50%). We want to know your best guess about the finding of this study.

Please select the statement that best summarizes the finding of this study:

*Some of the increase in the income of the top 1% over the last 50 years has come at the expense of the income of the poorest 50% in the U.S.; None of the increase in the income of the top 1% over the last 50 years has come at the expense of the income of the poorest 50% in the U.S.*

### *Perceptions of others' zero-sum thinking*

162. [W7] **In the next task, you will have the opportunity to earn a \$100 bonus, which is 100,000 points.** A few days after the survey is complete, you will know whether you have earned this bonus. The payment will be made to you in the same way as your compensation for this survey, so no further action is required on your part.

You will be shown a question which you have already seen in the survey. We will then display the possible choices. We would like you to evaluate each choice and determine **how likely it is that each response is chosen by those taking this survey.** (Note: This survey is taken by individuals all across the United States and those taking it are representative of the full U.S. population in terms of age, gender, race, income, and state of residence.) We would like you to answer as carefully as possible based on what you think others will answer. After you have completed the task, we will look at the choices made by all other people who took this survey. If your response matches the answers given by all other people taking the survey, then you will earn the 100,000 point bonus. We now turn to the question.

*Please tell us whether you agree with the following statement:*

*"In the United States, there are many different income classes. If one group becomes wealthier, it is usually the case that this comes at the expense of other groups."*

**Out of 100 respondents who took the survey, how many do you think selected each of these choices? Your answers must add up to 100.**

- [text box] *Strongly agree*
- [text box] *Agree*
- [text box] *Neither agree nor disagree*
- [text box] *Disagree*
- [text box] *Strongly disagree*

### *Feedback*

163. [W6-W7] Please feel free to give us any feedback regarding this survey.  
[text box]