Zero-Sum Thinking and the Roots of U.S. Political Differences*

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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 20,400 U.S. 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. 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 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. The underlying assumption is 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 (Bergeron et al., 2023). 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 no longer are zero-sum, leading to cultural mismatch (Nunn, 2021).

In this paper, we explore the importance of zero-sum thinking for political and policy preferences, as well as its historical and ancestral roots. To achieve this, we collected detailed survey data from a sample of approximately 20,400 U.S. residents, which is broadly representative of the population along key demographic dimensions such as age, gender, race, state of residence, and income. These data combine 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 each ancestor's location during different life stages, their education and occupation, and their income relative to other households at the time.

Although we only ask respondents for information up to their grandparents' generation, we can indirectly infer characteristics of their great-grandparents' household. Thus, this approach gives us insights that span four generations. For instance, knowing where a person's grandparents grew up tells us about their great-grandparents' residence during their 20s to 40s. Similarly, the economic conditions of grandparents during their upbringing are informative 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 proxy for ancestral experience.[1] 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 four 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.[2]

Using principal component analysis, we find that the data indicate the presence of a general zero-sum worldview – captured by the first principal component of these questions – 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 focus on four core policy issues: redistribution, gender

[1] A noteworthy exception is Becker et al. (2020), who craft surveys to gauge multi-generational experiences following forced migration in post-WWII Poland.

[2] Throughout the paper, we use the term "zero-sum thinking" to capture zero-sum or negative-sum thinking. The difference between these two notions is the extent to which resources are destroyed during the interaction between the winners and losers.

equality, racial equality, and immigration. Conceptually, people's views on these policies may be influenced by their zero-sum mindset in three ways: first, people who believe that the success of some groups comes at the expense of others might support policies that "correct" for the perceived harm and externality. Concerns about procedural fairness, i.e., about the process through which income was generated and whether it was gained in a zero-sum interaction, may also shape views about whether certain groups deserve policy assistance. For both of these channels, the strength of the link to policy views will depend on whether the zero-sum interaction is at the expense of an advantaged group (e.g., higher incomes) or a disadvantaged one (e.g., lower incomes). The overall effect of zero-sum thinking on policy views will also be shaped by individuals' degree of self-interest and whether they belong to the group perceived as gaining or losing from the zero-sum dynamic.

Empirically, 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 toward disadvantaged groups. These policies include taxation, universal healthcare, and affirmative action for women and African Americans. More zero-sum individuals also tend to support more restrictive immigration policies. While a zero-sum mindset generally correlates with stronger alignment with the Democratic Party (and weaker alignment with the Republican Party), it is not primarily a partisan issue. Instead, it helps explain variation in views *within* parties. Finally, we show that self-reported zero-sum and policy views correlate with real-stakes actions, lending confidence to our measures.

A potential issue is that zero-sum thinking may be associated with other 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 captures a distinct dimension shaping policy views and is quantitatively important in explaining them. 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 a significant coalition within the Democratic Party supports 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 help explain both patterns. Despite the Democratic Party's general stance favoring more open immigration policies, its most zero-sum members are more likely to prefer 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 are associated with their present-day zero-sum thinking. We focus on factors especially relevant to U.S. history: ancestral economic mobility, immigration, and enslavement. We analyze both the direct (e.g., whether the individual's ancestors were immigrants) and indirect (e.g., whether the ancestors resided in areas with a high share of immigrants) relationships of these factors with zero-sum thinking.

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 during those periods. This provides measures of the economic well-being of parents, grandparents, and great-grandparents during adulthood. We can thus construct measures of self-perceived 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 magnitudes are fairly similar for mobility experienced across all generations.

Concerning immigration, we first show that having immigrant ancestors is robustly associated with less zero-sum thinking. The relationship is more pronounced for recent episodes of immigration: it 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 large share of immigrants shows similar patterns. We link our survey information on where parents and grandparents grew up to county-level data on the average shares of the population who 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 counties with larger shares of immigrants, the respondent (their child or grandchild, respectively) possesses a less zero-sum worldview today. This finding corroborates the idea that the perspectives of ancestors were shaped by the newly-arrived immigrants in their vicinity, and these views were 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-specific patterns 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 the most zero-sum on average (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 U.S. citizens 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 episodes of historical enslavement are also associated with more zero-sum thinking today.

To further explore correlates of historical slavery, we examine growing up in a county with more chattel slavery, as 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 historical immigration, the place-specific patterns 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 were faced by all Black Americans, not just those whose ancestors were directly enslaved.

Finally, we check the generality of our findings using data from the World Values Survey (WVS) across 72 countries. This survey contains 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 correlation with upward mobility to be more general. 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 relationships we observe 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 Bergeron et al. (2023). 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 on either 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 beyond small-scale pre-industrial societies.

Our work also complements 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 greater "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 alone (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 that, more generally, a history of enslavement and oppression is associated with more zero-sum thinking.

Our work is related to studies that consider the relationships between zero-sum thinking and various political factors. Andrews Fearon et al. (2021) investigate the link between zero-sum thinking and distrust in democratic institutions in the U.S. and U.K. We study not how zero-sum thinking shapes individuals' views on the legitimacy of the political system, but how it relates to their 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 attitudes vary 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 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 models 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 work. 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, and reduced zero-sum thinking is 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., 2023a,b).

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, Voigtländer and Voth, 2012, Becker et al., 2016). However, this also captures horizontal and oblique transmission, thus existing data are often insufficient to isolate vertical transmission alone. 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 Becker et al. (2020), who also collect novel information for respondents from Poland to measure ancestral forced migration after WWII. Both studies show that contemporary surveys can be used to 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 surveyed in seven 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 (2023).

The survey is approximately 20 to 30 minutes long, depending on the individual respondent and the wave. The survey duration was similar across all waves (see Appendix Figure A1).

Sample

To arrive at our analysis sample, we drop individuals who did not complete or spent less than 10 minutes on the survey. Appendix Table A1 shows descriptive statistics for the analysis sample and shows that it is broadly similar to the U.S. population on key socioeconomic characteristics.

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%), as seen in Appendix Table A2. 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 H provides the entire survey questionnaire. Our survey includes the following modules:

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

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 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 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. About 1% of respondents have missing answers regarding both parents' locations; for grandparents' locations, the share is 7%. 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 (see Appendix Table A5 for a balance check for missing ancestors' information). We systematically control for these characteristics in our analysis.

Policy views: we ask respondents about their views on redistribution, race, gender, and immigration, 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 about their ancestry and then about their policy views; the other half is asked in the reverse order.

C. *Measure of Zero-Sum Thinking*

Our baseline measure of zero-sum thinking is based on four questions about the extent to which respondents believe that relationships in different domains are zero-sum. 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., the zero-sum mindset, rather than the belief that a particular setting is zero-sum. Respondents' answers to

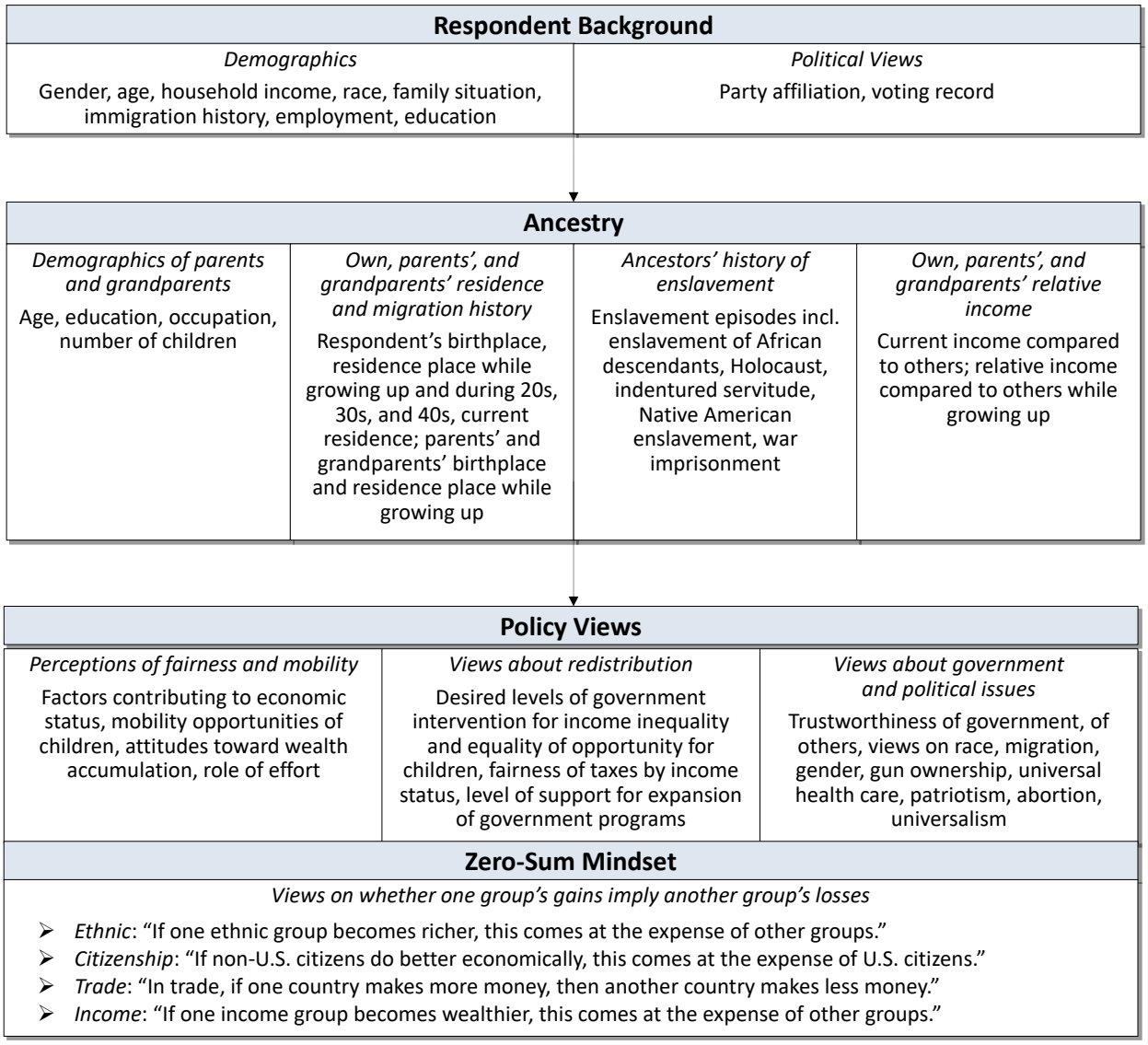


Figure 1: Block Diagram of Survey Flow

any single question could be influenced by other factors, such as their political views and their attitudes towards 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 taking the first principal component of responses to multiple questions in different domains, our constructed measure is more likely to reflect primarily zero-sum thinking, as opposed to other traits factoring 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 respon-

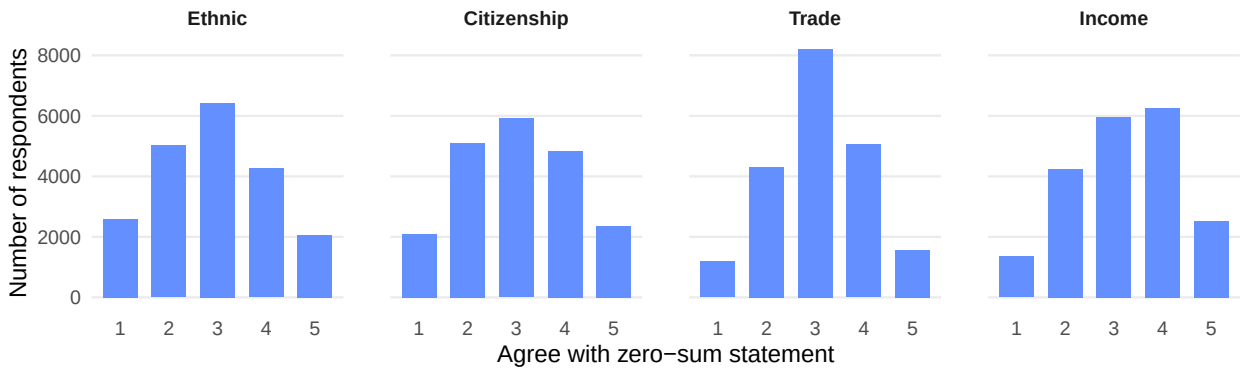


Figure 2: Distributions of Responses to Zero-Sum Questions

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.

dent 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 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 (see Appendix Table B2). We find that the first principal component is positively related to all four zero-sum measures and has significant explanatory power (e.g., has an eigenvalue of 2.30). The estimated weights for all questions have the same sign and are very similar in magnitude, ranging from 0.40 to 0.55. This suggests the presence of a single underlying factor, which we interpret as zero-sum thinking.

The estimates we report 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.[3] The estimates are virtually identical if we use an equally weighted average rather than the first principal component, if we control for the second principal component, and/or if we exclude the citizenship measure, which one may worry is particularly influenced by respondents' political views. The variables used in the analysis are defined in detail in Appendix B, with summary statistics reported in Appendix Tables B3 and B4.

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

Survey responses versus revealed preferences

To what extent do these self-reported beliefs and policy views reflect respondents' true attitudes? We 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 with real actions.

Robustness checks

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

The survey was implemented in seven waves between 2020 and 2023. The fact that our results do not differ significantly across survey waves further suggests that our results are not likely to be driven by short-term changes to the respondents' environments. We also validate our findings using the World Values Survey, which spans a much longer period.

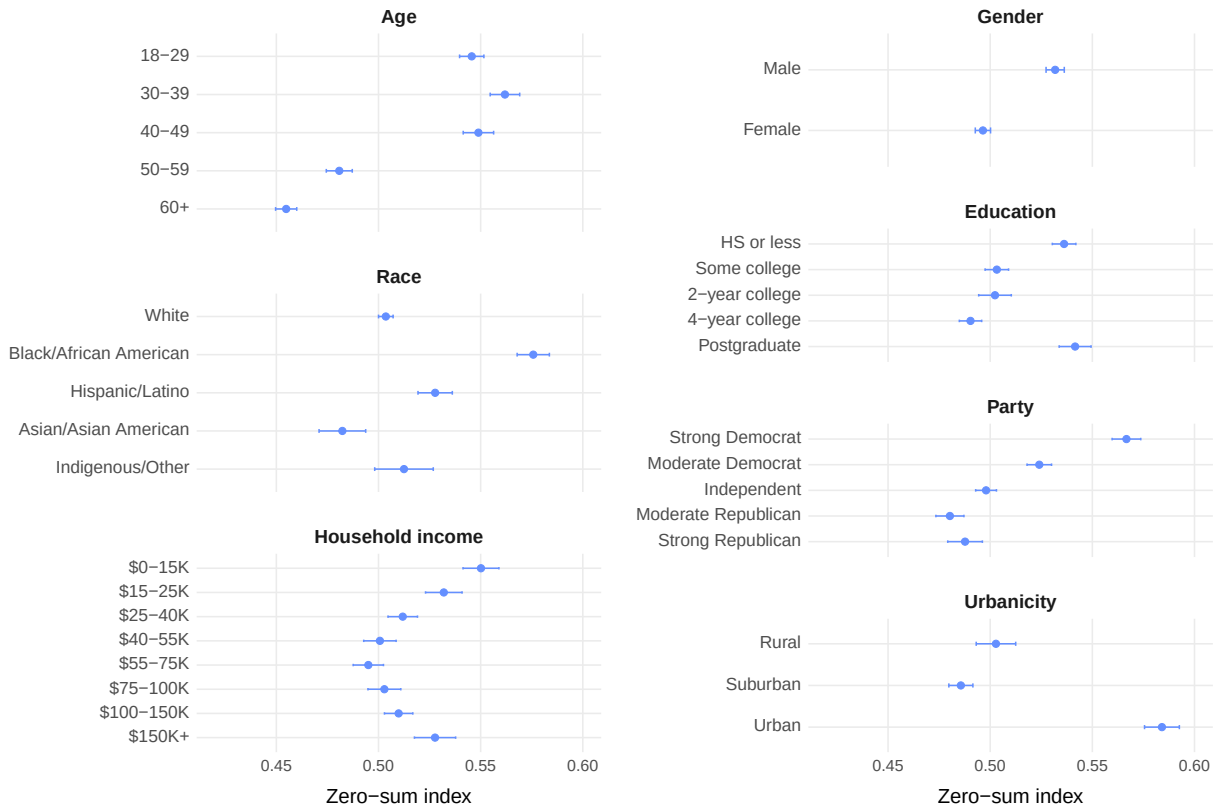


Figure 3: Average Zero-Sum Index by Demographic Group

Notes: Horizontal bars are 95% confidence intervals.

E. *Correlates of Zero-Sum Thinking*

Figure 3 shows how the average zero-sum measure varies across demographic groups.[4] First, older respondents tend to be less zero-sum. We return to the question of age versus cohort effects 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: Republicans exhibit less zero-sum thinking on average.[5] Finally, more educated respondents are generally less zero-sum.[6]

[3]Specifically, for each observation, we subtract the minimum value of the index and divide by the maximum minus the minimum.

[4]In general, we find the same patterns in a multivariate regression that includes all covariates simultaneously (Appendix Table C4).

[5]These patterns, especially for age and income, are even stronger and become approximately monotone if we restrict the sample to the most attentive respondents (Appendix Figure D2).

[6]It appears that respondents with a postgraduate degree (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 (Appendix Figure D2).

We find no clear regional patterns in the average zero-sum index (Appendix Figure C1). 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 explore the potential political implications of zero-sum thinking.

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. As shown in Figure 4, we find that while 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. We also find variation across domains, which underscores again the importance of accounting for multiple dimensions in order to adequately measure zero-sum thinking. Democrats are more zero-sum on issues related to ethnicity, trade, and income, but Republicans are more zero-sum in regard to citizenship.[7]

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:

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

where i indexes individuals and s their state of residence. 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, including detailed controls for demographics and

[7]For the interested reader, we also report the distributions of responses by party to the four zero-sum questions underlying the principal component measure (Appendix Figure C2).

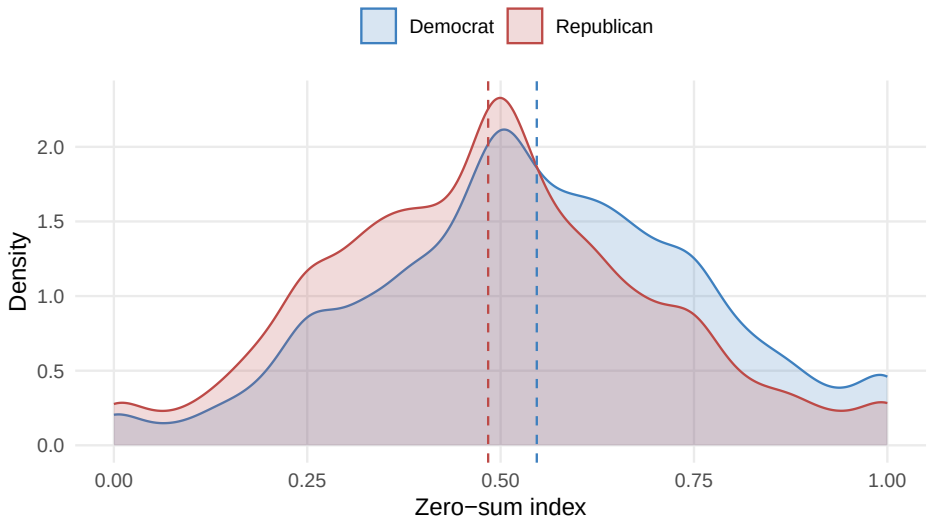


Figure 4: Density of Zero-Sum Index By Party

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.

other beliefs. Y_i denotes an outcome of interest, corresponding to four 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.[8]

Conceptual link between zero-sum thinking and policy views

Our analysis focuses on four groups of policy views: pro-redistribution preferences, views about policies to promote race and gender equality, and immigration policy. Conceptually, how do we expect zero-sum thinking to shape these views?

There are three major forces at play. First, a zero-sum mindset involves the belief that the success of some groups comes at the expense of others, i.e., that a group imposes a negative externality on another. Therefore, we expect more zero-sum-minded respondents to support policies that "correct" for the harm and externality one group imposes on another. We call this the *externality correction* concern. This externality might be perceived as worse when it is generated by an advantaged group and comes at the expense of a disadvantaged one (e.g., if higher-income people impose the externality on lower-income ones), as opposed to when it goes in the other direction (e.g., if lower-income people impose an externality on higher-income ones). Second,

[8]The questions that constitute each of the indices are listed in Appendix Table B2, along with their factor loadings in the principal component analysis. The full set of correlations between the zero-sum index and each of the policy questions in our survey is shown in Appendix Figure C3.

people may have *procedural fairness* concerns about how an individual or group obtains their income, i.e., about the process that generates income and, specifically, whether it is zero-sum. Thus, individuals or groups who enrich themselves partly through zero-sum interactions might be considered less deserving of help through policies. Instead, it might even be considered fair to have them compensate the group they are hurting. Again, the strength of this concern might depend on whether the group imposing the zero-sum interaction is the disadvantaged or advantaged one. Third, individuals may exhibit *self-interest*, in which case the link between their policy views and zero-sum perceptions depends on whether they are part of the group losing or gaining from the zero-sum interaction. When an individual is part of a group that gains from the zero-sum interaction, the net effect is theoretically ambiguous and depends on the strength of the self-interest motive relative to these other concerns.

For concreteness, consider the case of redistribution. (In Appendix G, we present a simple model for this case, although the logic and findings apply equally to the other policies.) If an individual has a zero-sum view of the world according to our measure, then they believe that the wealth and income of the better-off have come at least in part at the expense of the worse-off. In this setting, there is a negative spillover from the rich or wealthy to the less fortunate. The first two arguments above indicate that the individual would support more redistribution because they would like to correct for this externality and because they have procedural fairness concerns, even more so as the zero-sum interaction is at the expense of a disadvantaged group. Redistribution 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 do not come at the expense of others. An example of a positive-sum mindset is the "trickle-down" economics view, in which the rich getting richer is a tide that lifts all boats, thus taxing and redistributing wealth is considered procedurally unfair and inefficient, since it does not correct any negative externality. The empirical link between zero-sumness and redistribution policy views will also depend on the respondent's degree of self-interest and their own income. If they are high-income *and* sufficiently self-interested, their zero-sum mindset should not be associated with more redistributive preferences. Empirically, we will show below that there is a clear link between a zero-sum mindset and support for redistribution even among high-income respondents, suggesting that self-interest is not the whole story.

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 act against this with policies such as affirmative action for both corrective and procedural fairness reasons. By contrast, individuals who do not view the world in zero-sum terms do not see as much justification to help disadvantaged groups. Again, self-interest might negate this association if individuals are part of the advantaged group and sufficiently self-interested. On immigration, the link between a zero-sum mindset and policy depends on which group is considered disadvantaged. Respondents who say that the gains of immigrants come at the expense of non-immigrants might believe that immigrants are the disadvantaged group if they come from, on average, poorer countries, which would dampen their wish to correct for this externality or their procedural fairness concerns.[9] The self-interest motive would push natives to be more anti-immigration. The data suggest 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, which we discuss next.

Empirical relationship between zero-sum thinking and policy views

The left panel of Figure 5 reports estimates of β from equation (1), which captures the relationship between zero-sum thinking and support for our policies of interest. For all four policy indices, we find large and significant coefficients. Zero-sum thinking is associated with support for redistribution, for reducing racial discrimination, for reducing gender discrimination, and for more restrictive immigration policies.[10] Although the coefficients are roughly similar in magnitude across the four policy areas, they are smallest for views about immigration and largest for views about gender. They remain significant when we add fixed effects for personal characteristics, including income, educational attainment, and party affiliation, indicating that respondent demographics alone cannot explain the relationship between zero-sum thinking and policy preferences. The estimated relationships also remain when we account for other beliefs and attitudes that might affect policy preferences; namely, 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.,

[9]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).

[10]We also find that zero-sum thinking is associated with support for legalizing abortion, gun rights, and spending on national defense (Appendix Figure C4). Understanding the link between zero-sum thinking and these policy positions remains an important area for future research.

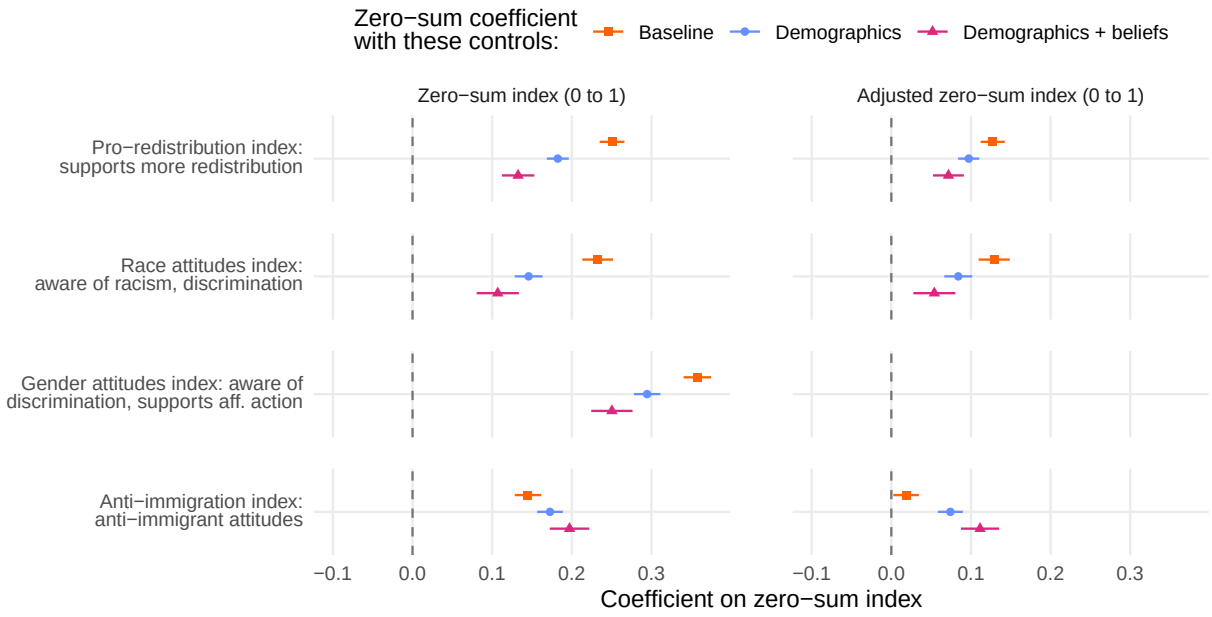


Figure 5: Zero-Sum Thinking and Policy Views

Notes: Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for survey wave. The three estimates in each column correspond to (1) the baseline specification, as well as specifications that add (2) demographic controls: fixed effects for race, household income, educational attainment, party affiliation, and fixed effects for household income interacted with a quadratic in age, and (3) controls for other core beliefs: whether the respondent thinks luck is more important than effort, their perceptions of economic mobility, the degree to which they are a moral universalist, how often they think the government can be trusted, whether they think people can generally be trusted, whether they think tradition is important, and how important religion is in their life. The beliefs controls are only available from the fifth wave of the survey onward, so for these specifications, we use only waves 5, 6, and 7. Outcomes and regressors are normalized to be between zero and 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 (with the adjusted zero-sum index), the coefficient corresponds to the first principal component of three of the baseline questions, removing the one most similar to the policy outcome in that group – income for the redistribution outcomes, ethnic groups for the race outcomes, and citizenship for the immigration outcomes. Note that no component in the zero-sum index is closely related to gender equality. Indices of policy views are the first principal component of the relevant questions. See Section 3 for details. Horizontal bars are 95% confidence intervals. For comparison, a one standard deviation increase in Democratic partisanship corresponds to a 0.50, 0.49, -0.31, and 0.37 standard deviation change in the pro-redistribution, race attitudes, anti-immigration, and gender attitudes indices, respectively (controlling for for age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for survey wave).

2018), generalized trust (Algan and Cahuc, 2010), trust in government (Kuziemko et al., 2015), and the importance of religion.

Our baseline strategy uses multiple questions from different situations to distill a measure of general zero-sum thinking across domains. To assess the sensitivity of our results, for each policy outcome, we create an alternative zero-sum measure (using principal component analysis) that removes from the index the zero-sum question about the domain most similar to the policy view.[11] Specifically, for the redistribution outcomes, we remove the income zero-sum question, and for attitudes towards immigration and race, we remove the questions about citizenship and

[11]The factor loadings for the three-question indices of zero-sum thinking are reported in Appendix Table B2.

ethnicity, respectively. (There is no component of the zero-sum index that is closely related to support for gender equality.) This ensures that there is no overlap between the domain of the policy question and any part of the zero-sum measure.

The estimates, reported in the right panel of Figure 5, show that the relationships persist when the most related zero-sum question is omitted from the index, although they are about half the magnitude. All estimates remain positive and highly significant.

Zero-sum thinking and self-interest

We now turn to the question of how self-interest interacts with zero-sum thinking in predicting policy preferences. We do this by estimating a version of equation (1) where we allow the coefficient on the zero-sum measure to vary depending on personal characteristics of the respondent that could be associated with self-interest. The estimates, which are reported in Table 1, show that zero-sum thinking predicts policy preferences even when they conflict with the respondent's self-interest, and, in general, the influence of zero-sum thinking tends to be strongest when it conflicts with one's self-interest.

We find that the association between zero-sum thinking and preferences for redistribution is positive and significant for all income groups, and tends to be larger for those with higher incomes (columns 1 and 2). The association of zero-sum thinking with support for gender equality is present for both genders and is actually stronger among men than among women (column 3). Similarly, we find that the positive association between zero-sum thinking and support for affirmative action is present for all races, but stronger for white individuals (columns 4 and 5).

We also examine whether the effect of zero-sum thinking on anti-immigration policies is mediated by the respondent's own experience as an immigrant, child of an immigrant, or grandchild of an immigrant. As shown in columns 6 and 7, we find that zero-sum thinking is associated with stronger anti-immigrant attitudes, regardless of the respondent's own experience with immigration. We do not observe clear heterogeneity in the zero-sum association depending on the respondent's immigration history.

In general, the evidence indicates that self-interest does not explain the relationship between zero-sum thinking and policy preferences. Zero-sum thinking appears to work through a distinct mechanism that is particularly influential when zero-sum thinking conflicts with one's self-interest.

Table 1: Zero-Sum Thinking and Policy Views: Interactions

	Pro-redist. index		Gender index	Race index		Anti-immigration index	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Zero-sum index	0.1295***	0.0438**	0.2185***	0.1170***	0.0625***	0.1726***	0.0665***
	(0.0186)	(0.0178)	(0.0121)	(0.0195)	(0.0196)	(0.0105)	(0.0102)
Zero-sum index × 25-55K	0.0473**	0.0359					
	(0.0238)	(0.0228)					
Zero-sum index × 55-100K	0.0675***	0.0653***					
	(0.0230)	(0.0221)					
Zero-sum index × 100K+	0.0673***	0.0763***					
	(0.0216)	(0.0208)					
25-55K	0.0340	0.0350					
	(0.0321)	(0.0320)					
55-100K	0.0706**	0.0780**					
	(0.0322)	(0.0323)					
100K+	0.0631*	0.0640**					
	(0.0326)	(0.0326)					
Male			-0.1987***				
			(0.0267)				
Zero-sum index × Male			0.1408***				
			(0.0164)				
Black				0.0932***	0.0943***		
				(0.0185)	(0.0185)		
White				-0.0616***	-0.0562***		
				(0.0123)	(0.0125)		
Zero-sum index × Black				-0.0262	-0.0222		
				(0.0315)	(0.0318)		
Zero-sum index × White				0.0464**	0.0354		
				(0.0220)	(0.0222)		
Zero-sum index × Immigrant						-0.0403	0.0084
						(0.0284)	(0.0269)
Zero-sum index × Child of immigrant						-0.0019	0.0158
						(0.0242)	(0.0234)
Zero-sum index × Grandchild of immigrant						0.0348	0.0409**
						(0.0213)	(0.0205)
Demographic controls	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓
Adjusted zero-sum index		✓			✓		✓
Observations	19,578	19,592	19,521	19,583	19,587	18,115	18,130
R^2	0.337	0.317	0.281	0.327	0.320	0.216	0.199

Notes: The table reports OLS estimates where the unit of observation is an individual. Demographic controls include age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

Zero-sum thinking versus other core beliefs

We also examine the extent to which zero-sum thinking captures something different from other core beliefs that correlate with policy views. As previously discussed, Figure 5 shows that the association between zero-sum thinking and policy views holds when controlling for other attitudes and beliefs that shape policy preferences. We also show this more formally using a Gelbach (2016) decomposition of the effect of zero-sum views (Appendix Figure C5). Although zero-sum thinking is correlated with these other core beliefs, there is a substantial direct effect that does not go through these other factors.

Figure 6 shows that, comparing standardized coefficients for these core beliefs and zero-sum thinking, the explanatory power of zero-sum thinking tends to be quantitatively larger than the other factors. One other important factor that has been extensively analyzed in the literature is the role of effort versus luck, especially regarding views on redistributive policy. Our analysis shows that both this attitude as well as zero-sum thinking are important and capture distinct dimensions that predict policy views.

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 beyond the United States.

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.[12] 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 statistically significant ($\rho = 0.18$;

[12]This is variable E041, asked in waves 2, 3, 5, and 6 of the WVS.

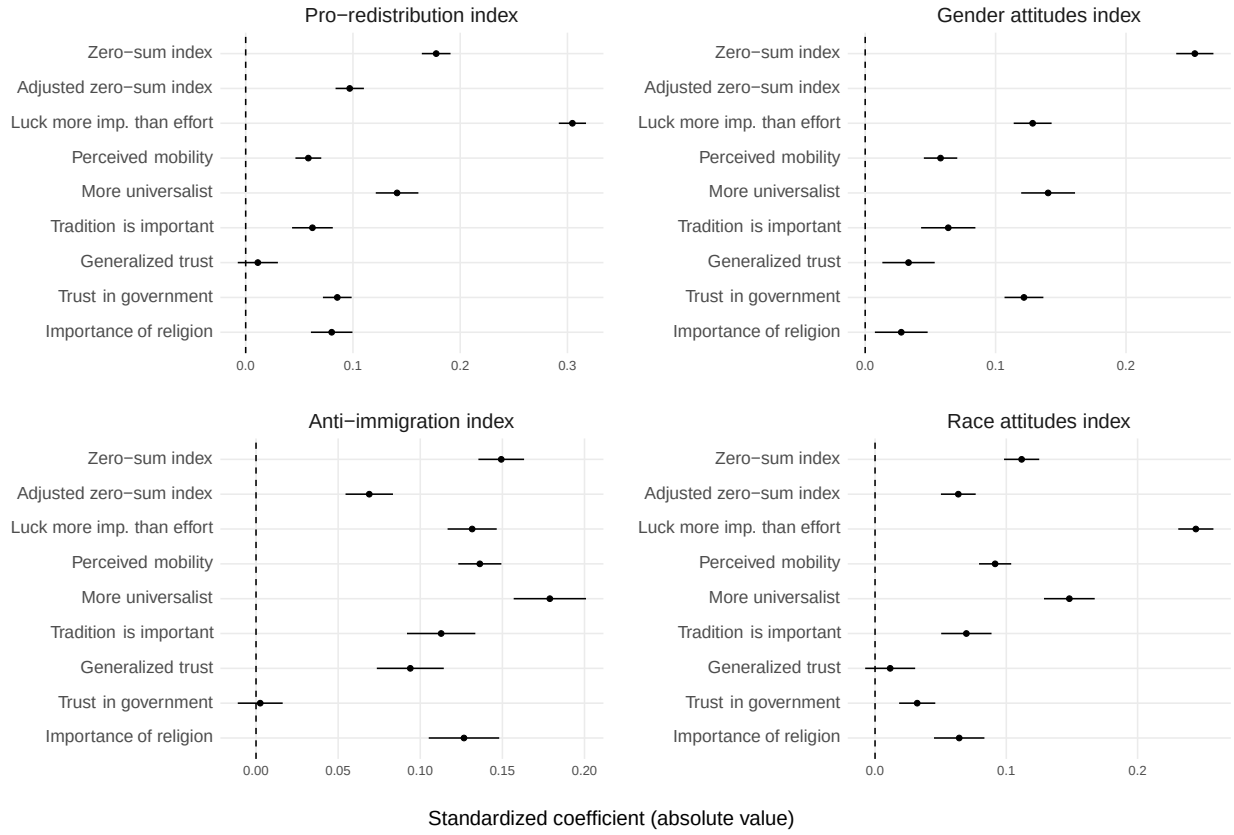


Figure 6: Comparing Zero-Sum Thinking to Other Core Beliefs: Standardized Coefficients

Notes: Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, whether the respondent was born in the United States, fixed effects for race, household income, educational attainment, party affiliation, and fixed effects for household income interacted with a quadratic in age. We also include wave fixed effects. The adjusted zero-sum index corresponds to our zero-sum index excluding the question most closely related to the relevant policy domain. Outcomes and regressors are standardized to have mean zero and standard deviation one. Horizontal bars are 95% confidence intervals.

$p = 0.001$).[13] Thus, although the WVS question focuses on a specific scenario – "wealth" and "getting rich" – it appears to capture some of the same variation as our richer multi-question index. Therefore, we view it as a reasonable 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.[14] Figure 7 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.

We also consider the generality of the relationship between zero-sum thinking and policy

[13] Appendix Figure C6 reports the binscatter bivariate relationship between the two measures.

[14] 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.

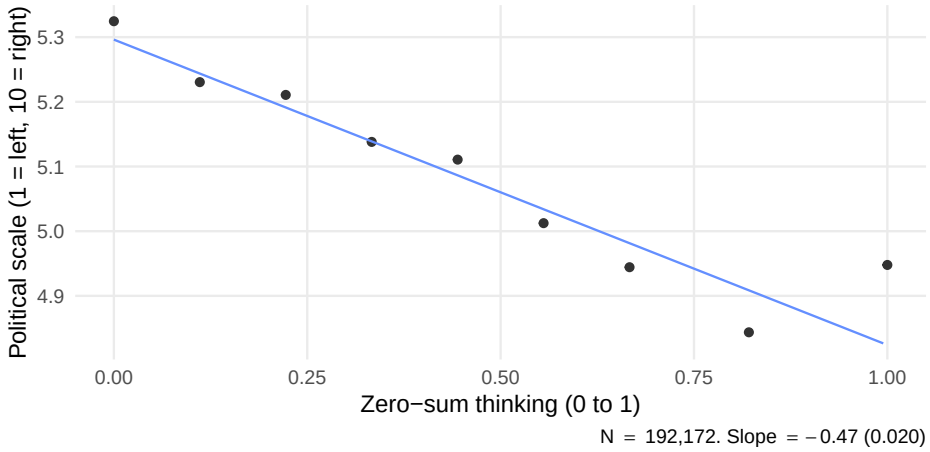


Figure 7: Zero-Sum Thinking and Political Affiliation Across the World

Notes: The figure reports a binscatter (Cattaneo et al., 2024) 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).

views. In Figure 8, we focus on the relationship between zero-sum thinking and four questions from the WVS – two that concern preferences for redistribution and two that concern immigration restrictions or anti-immigrant attitudes. Given the absence of appropriate survey questions in the WVS on perceived discrimination and support for affirmative action for women and African Americans, we do not include these outcomes.

The findings are consistent with those for the U.S. from Figure 5. Zero-sum thinking is positively related to pro-redistribution and anti-immigration attitudes. The relationship with redistribution is stronger than with immigration, but both are robust to the inclusion of income, education, region, and political affiliation fixed effects. This is likely due to the link between the wealth-focused measure of zero-sum thinking in the WVS and preferences for redistribution, whereas there is no such link with attitudes towards immigrants. In the WVS sample, we also check that the estimated effect of zero-sum thinking is not just picking up other values and beliefs that might be important for our outcomes of interest. We control for four of the measures in our U.S. survey sample that are available in the WVS: whether luck is more important than effort, moral universalism, belief in the importance of tradition, and generalized trust. As with our U.S. sample, we find that the effect of zero-sum thinking is very similar when we account for all of the other belief measures. We also explore the effect of each of these controls on our relationships of interest, again using a Gelbach decomposition. We find that there is a substantial direct effect

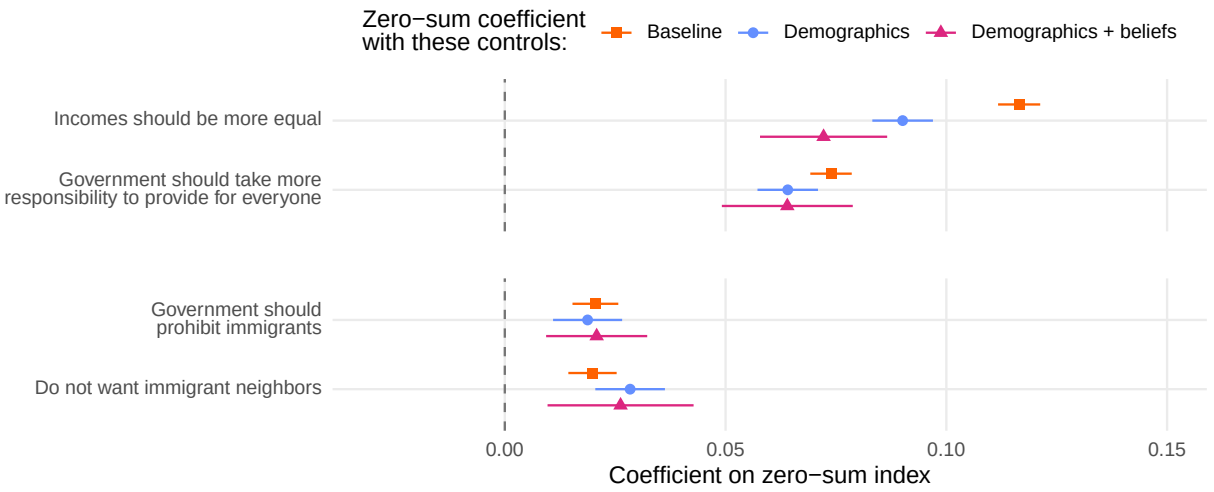


Figure 8: Zero-Sum Thinking and Policy Views Across the World

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 three estimates correspond to (1) the baseline specification as well as specifications that add (2) demographic controls: income, education, political affiliation (on a left-right scale), region, and fixed effects for household income interacted with a quadratic in age, and (3) controls for other core beliefs: whether the respondent thinks luck is more important than effort, the degree to which they are a moral universalist, whether they think people can generally be trusted, and whether they think tradition is important. Outcomes and regressors are normalized to be between zero and one. All variables are defined in Appendix B. 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 four regressions are, from top to bottom, 245,737, 247,177, 124,692 and 236,682. Adding demographic controls, they are 117,327, 117,532, 55,736, and 113,847. Adding controls for other beliefs, they are 27,799, 27,859, 27,387, and 25,916.

of zero-sum thinking on policy preferences that does not go through these other factors (see Appendix Figure C7).

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 zero-sum thinking might help us better understand some aspects of U.S. political and policy views.

Democrats voting for Donald Trump

One surprising fact about the 2016 U.S. Presidential election, in which Donald Trump was elected over Hillary Clinton, was the extent to which Democrats voted for Donald Trump. According to survey-based estimates, upwards of 13% of individuals who voted for Trump had voted for Barack Obama in the previous election, and 12% of Bernie Sanders supporters in the 2016 Democratic primaries then voted for Trump (e.g., Skelley, 2017, Sides, 2017).

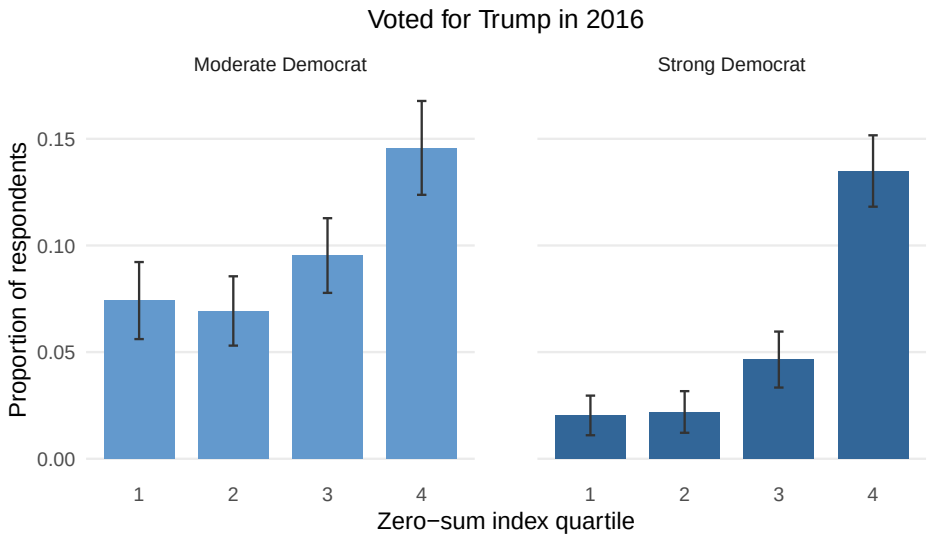


Figure 9: Democrats Voting for Trump by Zero-Sum Quartile

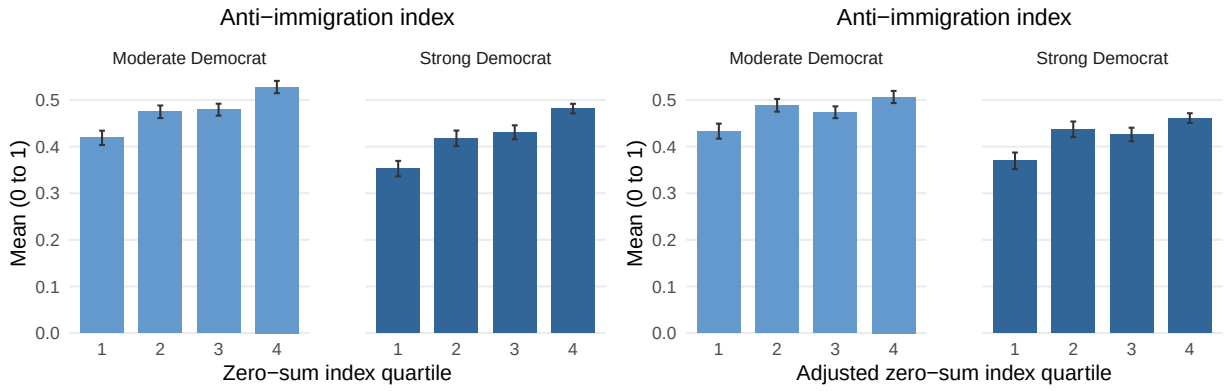
Notes: Vertical bars are 95% confidence intervals. Appendix Table C5 reproduces these results with demographic controls.

Many factors generated this outcome, but we find that zero-sum thinking is a strong predictor of this pattern. Figure 9 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.[15]

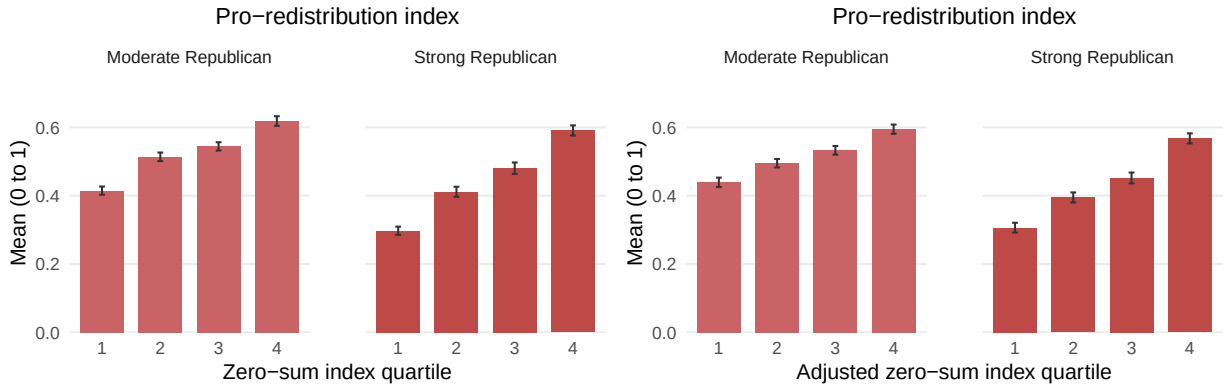
Within-party differences and divisions

Although policy support typically aligns fairly well with party affiliation, there remains important variation in views within parties (Oliphant and Cerda 2019; Bonomi et al. 2021; Gethin et al. 2021). For example, views about immigration policies are 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

[15]Among Republican respondents, zero-sum thinking is not significantly associated with a higher likelihood of voting for Trump. One explanation is that Republicans generally vote for Donald Trump because of party loyalty, so the marginal effect of zero-sum thinking is likely to be smaller for this group than for Democrats.



(a)



(b)

Figure 10: Zero-Sum Thinking and Within-Party Differences

Notes: Vertical bars are 95% confidence intervals.

provide economic support for the poor (Drutman et al. 2019, Kitschelt and Rehm 2019). We find that individual-level zero-sum thinking may explain some of these intra-party differences.

Figure 10 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.[16]

[16]These patterns are robust to including demographic controls, wave, state, and race fixed effects (Appendix Table C5). We also find that zero-sum thinking among Republicans does not explain as much anti-immigration sentiment; similarly, it does not explain as much support for redistribution among Democrats. Within party, we would expect zero-sum thinking to most likely have an impact for those contradicting the "party line."

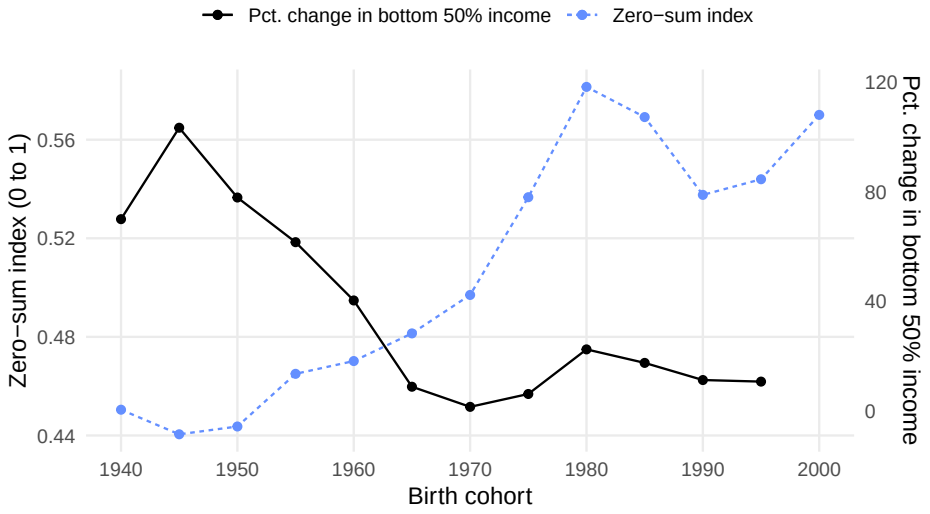


Figure 11: Economic Growth and Zero-Sum Thinking, By Birth Cohort

Notes: The black solid line is the percentage change in average income for the bottom 50% of the population during 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. Appendix Table C6 reproduces these results with demographic controls.

The young and their preferences for redistribution

Figure 3 showed that younger individuals tend to view the world as more zero-sum. This explains why the young are more likely to support government redistribution, but the question remains whether the difference in zero-sum thinking by age is due to a birth cohort effect or a life-cycle effect.

To understand this, we compare the economic growth and the average level of zero-sum thinking across birth 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 11. 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 in the U.S., with decadal growth ranging from −5% to 14%.[17]

We compare this pattern to the cross-cohort variation in zero-sum thinking, which is shown in Figure 11. 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

[17]The graph looks similar when we consider the pre-tax income growth of the bottom 90% (Appendix Figure C8).

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, and in an environment that was more zero-sum.

One concern with the relationship shown in Figure 11 is that it is impossible to disentangle the effects of age from those of varying economic conditions for different cohorts. Therefore, we examine the link between zero-sum thinking and the economic conditions during the first 20 years of a person's life using data from the multiple countries surveyed in the World Values Survey. Specifically, we estimate the following equation:

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

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 controls for 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 separate age effects from effects due to economic conditions early in one's life. Figure 12 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.

4. The Historical Predictors of Zero-Sum Thinking

We now consider the historical predictors 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 themselves experienced or whose ancestors

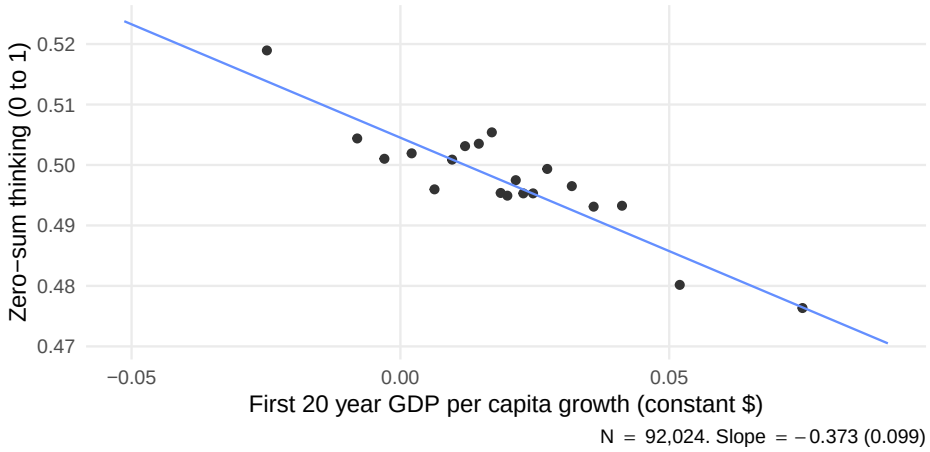


Figure 12: Relationship Between GDP Growth in Childhood and Zero-Sum Thinking

Notes: The figure reports a binscatter partial correlation plot (Cattaneo et al., 2024) 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. We exclude individuals who were under the age of 20 when they were surveyed, although the results are robust to their inclusion. Survey data are from the World Values Survey, and GDP data are from the World Bank.

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 could also have 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, with consequences that persist to this day. Chattel slavery was an economic and social system that was fully zero-sum (or, arguably, even negative-sum). An enslaved individual's resources are 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 who experienced enslavement or its aftermath have more zero-sum views.

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:

$$\begin{aligned} \textit{Zero Sum}_i &= \beta\, \textit{Respondent Experience}_i + \beta_p\, \textit{Parents Experience}_i \\ &\quad + \beta_{gp}\, \textit{Grandparents Experience}_i + \mathbf{X}_i\mathbf{\Gamma} + \alpha_{s(i)} + \varepsilon_i, \end{aligned} \tag{3}$$

where i indexes survey respondents and s denotes their current state of residence. 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 of β_p and β_{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*$_i$ measure ancestral exposure to certain environments. In these cases, β_p and β_{gp} capture the environment's influence on the parents or grandparents and the subsequent transmission of their traits to the respondent.

The vector $\mathbf{X}_i$ includes controls for the 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 educational attainment, party affiliation, and race of the respondent, as well as fixed effects for their state of residence when they took the survey, $\alpha_{s(i)}$. In all regressions except those measuring relationships with intergenerational mobility, we further include fixed effects for the respondent's household income and their interactions with age and age squared.

A contribution of our data collection effort is the inclusion of ancestral measures for several generations. Many studies have shown that respondents' own experiences can affect their cultural traits later in life. However, because of data constraints, other studies cannot cleanly examine the experiences of previous generations, which, as we will show, can affect the estimates.

A. *Intergenerational economic mobility*

We test for the relationship between self-perceived intergenerational economic mobility and zero-sum thinking 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.[18] The difference in scores across generations provides a measure of self-reported 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 13. The first panel shows 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)

[18] Respondents could also choose "I don't know," which we code as missing.

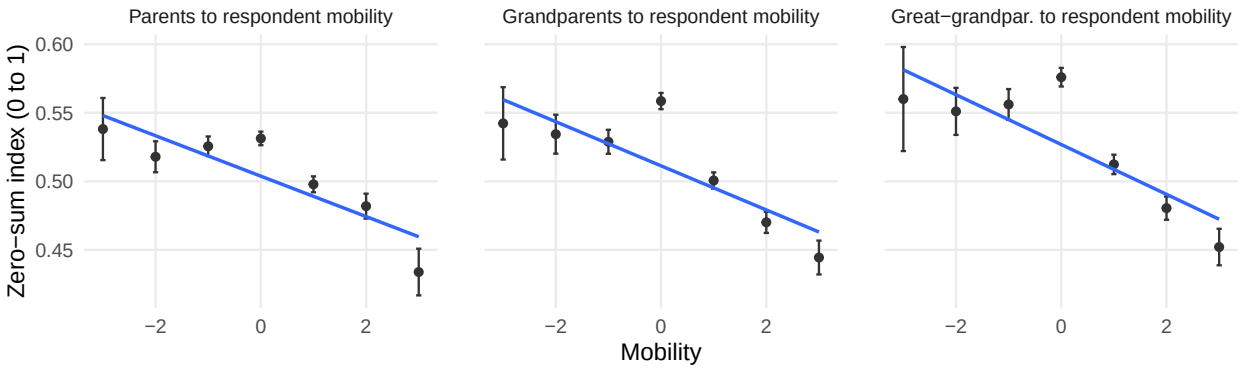


Figure 13: Zero-Sum Thinking and Ancestral Economic Mobility

Notes: Mobility variables measure the change in the perceived economic standing of households from different generations. "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.

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.[19]

Having looked at "long differences" in household income between distant generations, we now examine the correlation with 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 childhood household relative income is 5 (the highest possible value), then it is impossible that mobility during the next generation is positive. Thus, the measures will tend to be negatively correlated. If the mobility measures are negatively associated with zero-sum thinking, as we find, then examining one measure while omitting others will lead to a downward bias in the magnitude of the estimated correlation. 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 1–4 of Table 2, show that greater mobility between all generations is associated with less zero-sum thinking. This is robust to the inclusion of state fixed effects (column 2) and race fixed effects (column 3). It is possible that the mobility effects are partly due to the respondent's current income. To assess the extent to which

[19]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.

Table 2: Zero-Sum Thinking and Ancestral Economic Mobility

	Zero-sum index (0 to 1)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Parents to respondent mobility	-0.0220***	-0.0221***	-0.0222***	-0.0443***				
	(0.0016)	(0.0016)	(0.0016)	(0.0023)				
Grandparents to parents mobility	-0.0240***	-0.0241***	-0.0241***	-0.0361***				
	(0.0019)	(0.0019)	(0.0019)	(0.0021)				
Great-grandpar. to grandparents mobility	-0.0184***	-0.0182***	-0.0186***	-0.0254***				
	(0.0022)	(0.0022)	(0.0022)	(0.0023)				
Great-grandpar. to respondent mobility					-0.0217***	-0.0218***	-0.0219***	-0.0347***
					(0.0014)	(0.0014)	(0.0013)	(0.0017)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓
Current relative income control				✓				✓
Observations	13,131	13,131	13,131	13,131	13,349	13,349	13,349	13,349
R^2	0.147	0.153	0.157	0.171	0.147	0.152	0.156	0.167
Dependent variable mean	0.529	0.529	0.529	0.529	0.529	0.529	0.529	0.529
Dependent variable std. dev.	0.222	0.222	0.222	0.222	0.221	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. 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.

this is important, in column 4, we include a control for the respondent's reported (1–5 scale) current relative income. The estimates remain similar and actually increase slightly, suggesting that the mobility effects are not driven by the respondents' current income. Columns 5–8 of Table 2 report regression estimates using the most long-run mobility measure, great-grandparents to respondents. Consistent with what we observe in the raw data, we find that longer-run intergenerational mobility is associated with less zero-sum thinking.

We undertake a number of checks to test the sensitivity of our estimates. First, younger respondents may not have yet have fully realized the upward mobility that they will experience. Thus, our measures of mobility to the respondent's generation may be measured with noise, resulting in attenuation. Thus, we reproduce Table 2 after restricting the sample to respondents 40 and older. We obtain results that are qualitatively identical (Appendix Table C7).

Second, for completeness, we also estimate specifications where each generation's mobility measure is included in separate regressions (Appendix Table C8). We find that the estimated coefficients are all substantially smaller in magnitude than those in Table 2, consistent with a

downward bias when the experiences of all ancestors are not taken into account.[20]

Third, 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 respondents' and their ancestors' occupations and construct measures of mobility based on occupational scores. The family's experience of (occupational) upward mobility is significantly correlated with less zero-sum thinking (Appendix Table C9). Fourth, we check that our results are robust to including a measure of the respondent's current income. Results remain unchanged (Appendix Table C10). Fifth, we also check that our results are similar when we consider only within-U.S. mobility by dropping cases where the relative income measure is for a generation that was living in a country other than the U.S. (Appendix Table C11). We also check that our results are not sensitive to controlling for the other ancestral characteristics that we examine – i.e., a history of immigration or enslavement (Appendix Table C12).

Lastly, we test the sensitivity of our estimates to measuring mobility along the paternal line. We first check whether the patterns are different depending on the gender of the respondent. We find that the estimates are similar for both genders, although slightly stronger for male respondents (Appendix Table C13). We also examine mobility along the maternal line (e.g., maternal grandparents' household income, etc.) and report this by gender, as well as for the full sample (Appendix Table C14). We obtain similar estimates.[21]

The patterns in the raw data, shown in Figure 13, suggest an asymmetric relationship, whereby downward mobility is not significantly associated with more zero-sum thinking but upward mobility is significantly associated with less zero-sum thinking. We check whether these patterns remain when we condition on our various covariates. To do so, we look at mobility from the great-grandparents to the respondent, split the sample by whether the mobility measure is positive or negative, and estimate our regressions separately for both groups. The estimates show that this asymmetry remains (Appendix Table C15). Thus, our mobility findings appear to be driven by upward mobility. An important direction for future research is to better understand the reason behind this asymmetry.

[20] 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.

[21] We focus on the paternal line mainly out of convention, but it is interesting to note that it does not seem to matter.

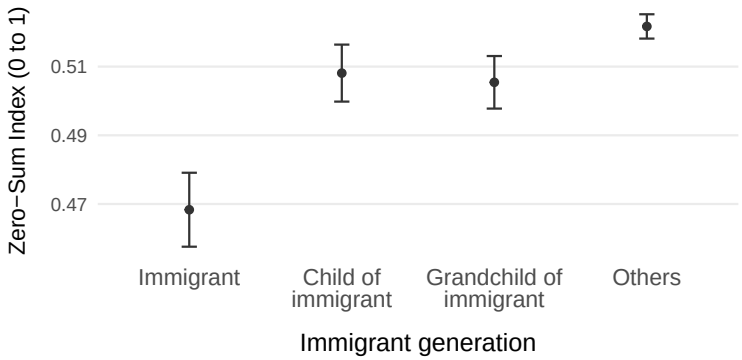


Figure 14: Zero-Sum Thinking and Immigration

Notes: "Others" corresponds to respondents whose ancestors were not immigrants to the U.S. Vertical bars are 95% confidence intervals. The means and standard errors for the four groups are 0.47 (0.0055), 0.51 (0.0042), 0.51 (0.0039), and 0.52 (0.0018), respectively.

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 information on the place of birth of the respondent, their parents, and their grandparents.[22]

Direct associations

We begin by reporting, in Figure 14, 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 who 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 3, 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 estimates confirm the patterns in the raw data from Figure 14. Being an immigrant is

[22]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 elsewhere, 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 elsewhere, then we infer that the grandparent(s) immigrated. See Appendix B for detailed variable definitions.

Table 3: Zero-Sum Thinking and Immigration

	Zero-sum index (0 to 1)		
	(1)	(2)	(3)
Respondent immigrated	-0.0442***	-0.0460***	-0.0412***
	(0.0059)	(0.0059)	(0.0067)
Parent immigrated	-0.0304***	-0.0321***	-0.0285***
	(0.0047)	(0.0048)	(0.0053)
Grandparent immigrated	-0.0027	-0.0023	0.0005
	(0.0041)	(0.0041)	(0.0042)
Demographic controls	✓	✓	✓
Wave fixed effects	✓	✓	✓
State fixed effects		✓	✓
Race fixed effects			✓
Observations	18,687	18,687	18,687
R^2	0.110	0.115	0.119
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, gender, and their interaction, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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.

associated with a 9% lower zero-sum index (equivalent to a 20% standard deviation decrease). We expect the relationship with parents' immigration to be smaller than with one's own experience, since it is unlikely that effects are perfectly transmitted to children. This is true in all specifications. The estimated coefficient for parents, β_p, is negative and significant and about 70 to 85% the size of the individual's own coefficient. The estimates for the grandparents' immigration experience are small and insignificant. 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 ancestral immigration leads to less zero-sum thinking, the negative relationship between the different generational measures of immigration

will lead to estimates that are biased towards zero when ancestral measures are not included, due to omitted variable bias. Again for completeness, we also report specifications with the measures included one at a time. As expected, we obtain similar but smaller estimates, as was the case for mobility (Appendix Table C16).

Indirect associations

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 to 1920.

Estimates of equation (3) with the historical immigration measures as the independent variables are reported in Table 4. Columns 1–3 report estimates where the independent variable of interest is the intensity of immigrant settlement during the Age of Mass Migration in 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 7–9 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). We cluster standard errors by county, the level at which our historical measures vary, to account for within-county correlation on the impact of our county-level factors.

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' (the coefficient is of 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 significant only for the grandparents), indicating that a higher immigrant share is associated with less zero-sum thinking. The coefficients on grandparents' locations may be more precise because they lived closer in time to the historical immigration wave, and the effects of this more direct exposure were then transmitted to the respondent. In fact, the effects are stronger (even for parents) when we restrict our sample to grandparents who lived closer to the Age of Mass Migration, between 1870 and 1920 (see Table

Table 4: Zero-Sum Thinking and County Foreign Share 1860-1920

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county foreign share	0.0104	0.0150	0.0189						
	(0.0247)	(0.0254)	(0.0248)						
Parents' counties foreign share				-0.0332	-0.0305	-0.0342			
				(0.0211)	(0.0208)	(0.0242)			
Grandparents' counties foreign share							-0.0390***	-0.0388***	-0.0381***
							(0.0074)	(0.0074)	(0.0082)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Child of immigrant		✓	✓		✓	✓		✓	✓
Grand-Child of immigrant			✓			✓			✓
Observations	17,512	17,405	16,168	15,796	15,794	14,834	12,482	12,477	12,477
R^2	0.095	0.096	0.098	0.109	0.109	0.111	0.111	0.112	0.112
Num. clusters	1,968	1,967	1,933	2,163	2,163	2,130	2,002	2,002	2,002
Dependent variable mean	0.507	0.507	0.505	0.509	0.509	0.507	0.511	0.510	0.510
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	0.174	0.174	0.174	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. State fixed effects refer to the respondent's current state of residence. All variables are defined in Appendix B, with summary statistics in Appendix Tables B3 and B4. Standard errors are clustered at the level of the respondent's county (columns 1–3), parents' counties (columns 4–6), or grandparents' counties (colums 7–9), and are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

C17 in the Online Appendix). The lack of a relationship for the 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. These 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 estimates are very similar when we control for whether the respondent's ancestors were immigrants themselves, suggesting that this 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 associations

The final factor that we consider – a particularly important one in the U.S. historical context – is the experience of 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 5, 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, we sequentially add state fixed effects and birth town fixed effects 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 3) is very similar to that for the most parsimonious one (column 1).

The fact that Black Americans tend to show more zero-sum thinking could be partially explained by the fact that their ancestors were often enslaved. 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.[23]

To check for this possibility, we focus specifically on Black respondents and test 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 enslavement. We estimate a version of equation (3) where the independent variable of interest is an indicator that equals one if the respondent indicates that at least one of their ancestors was enslaved in some manner. The estimates are reported in columns

[23]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 5: Zero-Sum Thinking and Race

	Zero-sum index (0 to 1)		
	(1)	(2)	(3)
African American/Black	0.0478***	0.0449***	0.0454***
	(0.0048)	(0.0049)	(0.0060)
American Indian or Alaska Native	-0.0064	-0.0067	0.0009
	(0.0150)	(0.0151)	(0.0182)
Asian/Asian American	-0.0187***	-0.0184***	-0.0260***
	(0.0067)	(0.0069)	(0.0097)
Hispanic/Latino	0.0002	-0.0021	-0.0084
	(0.0049)	(0.0051)	(0.0065)
Native Hawaiian or Other Pacific Islander	0.0021	0.0074	-0.0158
	(0.0270)	(0.0277)	(0.0310)
Other race	-0.0047	-0.0050	-0.0026
	(0.0089)	(0.0090)	(0.0103)
Demographic controls	✓	✓	✓
Wave fixed effects	✓	✓	✓
State fixed effects		✓	✓
Birth town fixed effects			✓
Observations	20,271	20,271	18,851
R^2	0.110	0.113	0.285
Dependent variable mean	0.514	0.514	0.517
Dependent variable std. dev.	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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.

1 and 2 of Table 6. 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). In our baseline estimates, we code these answers as zero, 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. The results we report here are similar if we drop individuals who respond "don't know" when asked about ancestral enslavement.

While our survey question focused on enslavement under chattel slavery among individuals with ancestors from Africa, the measure captures other forms of enslavement, including imprisonment or internment during war, concentration camps during the Holocaust, indentured servitude,

Table 6: 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	0.0196**	0.0198**	0.0558***	0.0546***	0.1443***	0.1443***	0.0834***	0.0837***
	(0.0084)	(0.0084)	(0.0118)	(0.0120)	(0.0086)	(0.0086)	(0.0054)	(0.0054)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	–	–	✓	✓	–	–	✓	✓
State fixed effects		✓		✓		✓		✓
Observations	2,417	2,417	4,199	4,199	13,647	13,647	20,263	20,263
R^2	0.057	0.078	0.080	0.090	0.149	0.155	0.122	0.125
Dependent variable mean	0.576	0.576	0.511	0.511	0.503	0.503	0.514	0.514
Dependent variable std. dev.	0.199	0.199	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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.

and forced reservation of Indigenous peoples. Thus, we are able to look at the correlations of zero-sum thinking with these other types of enslavement for other racial groups. Estimates of reporting ancestral enslavement for other racial groups and the full sample are reported in columns 3–8 of Table 6. We find a positive relationship between ancestral enslavement and zero-sum thinking for groups other than Black respondents and in the full sample.

The findings show an interesting pattern: Black Americans appear to have the highest levels of zero-sum thinking, and a possible explanation is the history of enslavement experienced by this group. However, the marginal effect of enslavement is highest for groups *other* than Black Americans. One explanation 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. We find preliminary evidence for this hypothesis in the fact that Black Americans are more zero-sum than other racial groups even after controlling for having enslaved ancestors (Appendix Table C18), and we discuss further evidence supporting this interpretation below.

We probe the relationships with different types of enslavement directly by including a question in waves 5 and after asking whether the following six episodes of enslavement apply to the respondent's ancestors: African descendants, the Holocaust, indentured servants, the internment of Japanese Americans during WWII, reservation of Indigenous Americans, and those taken as a

Table 7: Zero-Sum Thinking and Ancestral Enslavement, By Episode

	Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Enslavement of African descendants	0.0446***					
	(0.0069)					
Holocaust		0.0152**				
		(0.0071)				
Indentured servants			0.0272***			
			(0.0082)			
Internment of Japanese-Americans				0.0617***		
				(0.0107)		
Native American enslavement					0.0418***	
					(0.0075)	
War prisoner						0.0126
						(0.0087)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Observations	8,798	8,798	8,798	8,798	8,798	8,798
R^2	0.157	0.153	0.153	0.156	0.155	0.152
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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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.

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 (controlling for race fixed effects) are reported in Table 7. We find that all forms of enslavement lead to more zero-sum thinking, and all are statistically 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 associations

To probe the lasting association of slavery and zero-sum thinking, we consider paths beyond the direct association 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 on enslaved labor during the antebellum period, captured by the share of the total population that was enslaved in 1860.

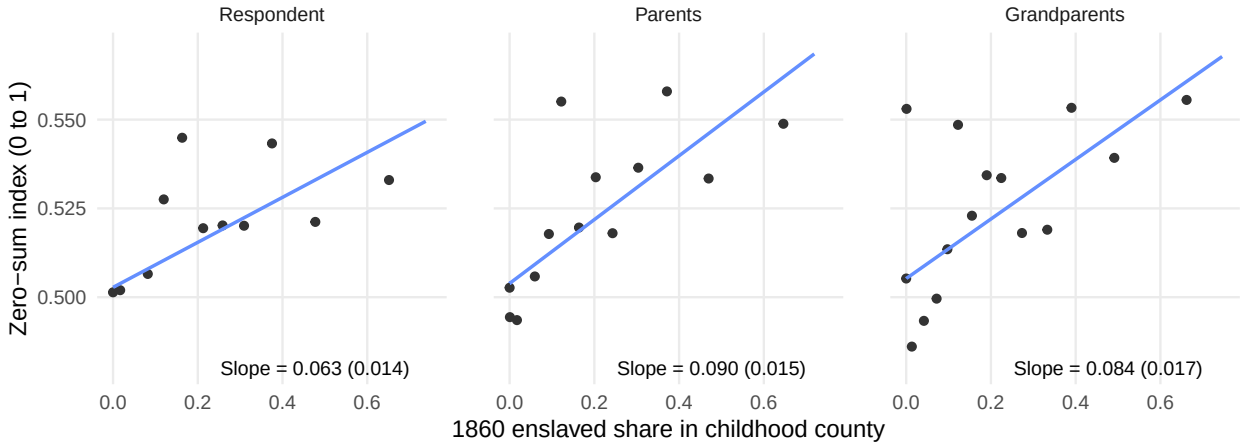


Figure 15: Relationships Between County Enslaved Share and Zero-Sum Thinking

Notes: The figure reports binscatter partial correlation plots (Cattaneo et al., 2024) of 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.

Figure 15 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 8 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, survey wave fixed effects, and state fixed effects. We then add race fixed effects (in column 2) and an indicator for whether any of the respondent's ancestors were themselves enslaved (in column 3). We find that growing up in a county that had a larger share of enslaved people is 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 (columns 4–6) and their grandparents grew up (columns 7–9). 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 enslaved.[24] Contrary to the results for historical immigration, the estimates for living in areas with historical

[24]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 C19, we obtain very similar estimates.

Table 8: 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)
Respondent's county enslaved share	0.0468***	0.0340***	0.0352***						
	(0.0130)	(0.0130)	(0.0130)						
Parents' counties enslaved share				0.0748***	0.0485***	0.0479***			
				(0.0132)	(0.0141)	(0.0144)			
Grandparents' counties enslaved share							0.0762***	0.0425***	0.0369***
							(0.0143)	(0.0130)	(0.0125)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects		✓	✓		✓	✓		✓	✓
Enslaved ancestor			✓			✓			✓
Observations	18,302	18,302	18,295	16,290	16,290	16,284	12,848	12,848	12,847
R^2	0.089	0.094	0.101	0.106	0.110	0.118	0.108	0.112	0.126
Num. clusters	2,086	2,086	2,086	2,234	2,234	2,233	2,060	2,060	2,060
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	0.211	0.211	0.211
Indep. variable mean	0.066	0.066	0.066	0.067	0.067	0.067	0.076	0.076	0.076
Indep. variable std. dev.	0.147	0.147	0.147	0.145	0.145	0.145	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. State fixed effects refer to the respondent's current state of residence. All variables are defined in Appendix B, with summary statistics in Appendix 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.

enslavement are still pronounced for the current generation, suggesting that place-based effects in those counties persist.[25]

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 was white ("Southern whites").

Table 9 reports estimates of the relationship between the average share of the population that were Southern whites from 1900–1940 in the county where the respondent grew up and their

[25]This finding adds to an extensive literature on the geographic distribution of preferences for redistribution. It is also in line with work on the political legacy of slavery in the U.S. South (Acharya et al., 2016, 2018).

Table 9: 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	0.1421**	0.1399**	0.1600**						
	(0.0717)	(0.0712)	(0.0741)						
Parents' counties southern white share				0.2150***	0.2134***	0.2566***			
				(0.0612)	(0.0611)	(0.0655)			
Grandparents' counties southern white share							0.2621***	0.2616***	0.2606***
							(0.0711)	(0.0710)	(0.0715)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	13,131	13,051	12,161	12,247	12,246	11,526	9,445	9,441	9,441
R^2	0.101	0.103	0.105	0.114	0.115	0.117	0.122	0.122	0.122
Num. clusters	1,239	1,238	1,220	1,555	1,555	1,528	1,462	1,462	1,462
Dependent variable mean	0.500	0.500	0.498	0.500	0.500	0.499	0.502	0.502	0.502
Dependent variable std. dev.	0.205	0.205	0.206	0.208	0.208	0.209	0.212	0.212	0.212
Indep. variable mean	0.025	0.025	0.025	0.022	0.022	0.022	0.022	0.022	0.022
Indep. variable std. dev.	0.034	0.034	0.034	0.032	0.032	0.032	0.032	0.032	0.032

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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. State fixed effects refer to the respondent's current state of residence. All variables are defined in Appendix B, with summary statistics in Appendix 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.

degree of zero-sum thinking today (columns 1–3). Analogous relationships are also reported for the counties where the respondent's parents (columns 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.[26] The estimates reported in Table 10 show a positive relationship between Confederate culture and zero-sum thinking. These results are for all counties, but the estimates are similar if we restrict the sample to non-Southern countries.[27]

The results in Tables 9 and 10 are robust to controlling for (direct) enslaved ancestry and the share of Black Southern migrants (Appendix Table C20) and to considering only the father and

[26]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.

[27]These effects are driven primarily by white respondents (Appendix Table C21).

Table 10: 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)	0.0061***	0.0063***	0.0050***						
	(0.0014)	(0.0016)	(0.0017)						
Parents' counties CCI (0 to 4)				0.0094***	0.0090***	0.0070***			
				(0.0015)	(0.0017)	(0.0016)			
Grandparents' counties CCI (0 to 4)							0.0119***	0.0119***	0.0092***
							(0.0020)	(0.0024)	(0.0022)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	18,160	18,160	18,160	16,125	16,125	16,125	12,681	12,681	12,681
R^2	0.086	0.090	0.095	0.101	0.106	0.111	0.104	0.110	0.115
Num. clusters	2,050	2,050	2,050	2,199	2,199	2,199	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
Indep. variable mean	2.236	2.236	2.236	2.161	2.161	2.161	2.106	2.106	2.106
Indep. variable std. dev.	1.234	1.234	1.234	1.160	1.160	1.160	1.153	1.153	1.153

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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. State fixed effects refer to the respondent's current state of residence. All variables are defined in Appendix B, with summary statistics in Appendix 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.

grandfather's county (Appendix Table C22).

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 spillovers. 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 more zero-sum views.

5. Conclusion

Our paper explores zero-sum thinking, 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. Given this finding, in future research, it would be interesting to explore the implications of zero-sum thinking for new party formation, coalitions, and electoral platforms.

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 predictors 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 views on a range of social, political, and economic issues may be strongly influenced by the extent to which one perceives that gains in society come at the expense of others – i.e., zero-sum thinking. These results raise a host of questions that could guide future research.

Given the fundamental nature of zero-sum thinking, could it also explain other economic, political, or social phenomena? Populism, conspiracy theories, and nativism are all rooted 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.

Finally, our analysis has shown that differences in zero-sum thinking are systematically connected to historical forces. Individuals are more zero-sum today if they have ancestors who lived in a zero-sum environment or who experienced zero-sum events. Understanding whether shorter-run experiences that take place over an individual's own life 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

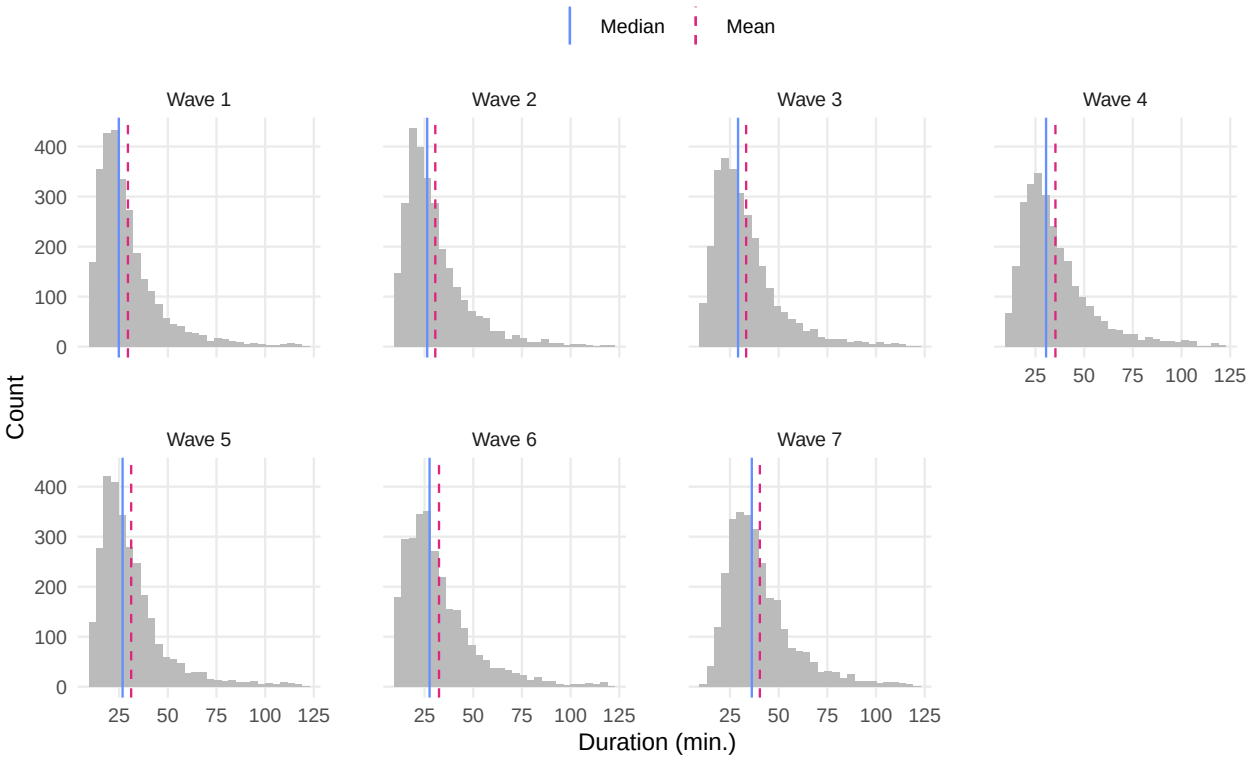


Figure A1: Survey Duration by Wave

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 A1: Covariate Balance for Survey and U.S. Population

	(1) Survey sample N = 20,352		(2) U.S. population		(2) – (1)	
	Mean	Std. dev.	Mean	Std. dev.	Diff.	p-value
Male	0.486	0.500	0.488	0.500	0.00	0.609
18–29 years old	0.199	0.399	0.199	0.399	0.00	0.859
30–39 years old	0.182	0.386	0.176	0.380	-0.01	0.045
40–49 years old	0.178	0.382	0.159	0.366	-0.02	0.000
50–59 years old	0.184	0.388	0.163	0.370	-0.02	0.000
60+ years old	0.257	0.437	0.303	0.460	0.05	0.000
$0–$24,999	0.173	0.378	0.163	0.370	-0.01	0.001
$25,000–$54,999	0.246	0.431	0.218	0.413	-0.03	0.000
$55,000–$99,999	0.260	0.439	0.238	0.426	-0.02	0.000
$100,000+	0.320	0.467	0.381	0.486	0.06	0.000
4-year college degree or more	0.478	0.500	0.348	0.476	-0.13	0.000
High school graduate or less	0.207	0.405	0.388	0.487	0.18	0.000
Employed	0.549	0.498	0.613	0.487	0.06	0.000
Unemployed	0.093	0.291	0.021	0.143	-0.07	0.000
Self-employed	0.068	0.252	0.066	0.248	0.00	0.205
Married	0.509	0.500	0.515	0.500	0.01	0.082
White	0.673	0.469	0.621	0.485	-0.05	0.000
Black/African American	0.120	0.324	0.120	0.325	0.00	0.764
Hispanic/Latino	0.107	0.309	0.172	0.377	0.06	0.000
Asian/Asian American	0.061	0.239	0.062	0.242	0.00	0.355

Notes: The table displays summary statistics for the overall U.S. population and the survey respondents. National statistics are from the IPUMS-CPS-ASEC data set for May 2022 (Flood et al., 2022). We present p-values of the differences between the two samples for each covariate. Survey quotas were designed to achieve a nationally representative sample in gender, age, household income, and race and ethnicity.

Table A2: 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.

Table A3: Predictors of Attrition

	Completed survey (1)
Constant	0.6790*** (0.0387)
Age 30-39	-0.0150** (0.0072)
Age 40-49	-0.0311*** (0.0074)
Age 50-59	-0.0434*** (0.0074)
Age 60+	-0.0275*** (0.0071)
Missing age	0.2887* (0.1617)
Male	0.0217*** (0.0044)
Other gender	-0.0085 (0.0323)
American Indian/Alaska Native	0.0326 (0.0236)
Asian/Asian American	0.0731*** (0.0106)
White	0.0459*** (0.0077)
Hispanic/Latino	0.0288*** (0.0096)
Native Hawaiian/Pacific Islander	-0.0028 (0.0409)
Other race	0.0051 (0.0156)
Missing race	-0.0420*** (0.0087)
$25,000–$54,999	0.0382*** (0.0072)
$55,000–$99,999	0.0459*** (0.0073)
$100,000+	0.0644*** (0.0075)
Missing income	-0.1962 (0.1584)
Some high school	0.0152 (0.0406)
High school degree/GED	0.0768** (0.0377)
Some college	0.0946** (0.0377)
2-year college degree	0.1144*** (0.0380)
4-year college degree	0.1290*** (0.0377)
Master's degree, M.B.A.	0.1366*** (0.0379)
Ph.D., J.D., M.D.	0.1409*** (0.0389)
Reached education question but did not answer	0.0693* (0.0380)
Did not reach education question	0.0776** (0.0377)
Moderate Republican	0.0178** (0.0086)
Independent	-0.0004 (0.0079)
Moderate Democrat	0.0105 (0.0084)
Strong Democrat	0.0353*** (0.0081)
Other party	-0.0513*** (0.0158)
Reached party question but did not answer	-0.0994 (0.1320)
Did not reach party question	-0.7305*** (0.0103)
Wave 2	-0.0147* (0.0076)
Wave 3	-0.0213*** (0.0079)
Wave 4	-0.0376*** (0.0083)
Wave 5	-0.0947*** (0.0082)
Wave 6	-0.1192*** (0.0083)
Wave 7	0.0919*** (0.0070)
Observations	27,271
R^2	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 reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

Table A4: Covariate Balance for Attrition

	(1) Did not finish survey N = 6,919		(2) Finished survey N = 20,352		(2) – (1)	
	Mean	Std. dev.	Mean	Std. dev.	Diff.	p-value
Male	0.436	0.496	0.486	0.500	0.05	0.000
18–29 years old	0.241	0.428	0.199	0.399	-0.04	0.000
30–39 years old	0.168	0.374	0.182	0.386	0.01	0.015
40–49 years old	0.165	0.371	0.178	0.382	0.01	0.021
50–59 years old	0.192	0.394	0.184	0.388	-0.01	0.191
60+ years old	0.233	0.423	0.257	0.437	0.02	0.000
$0–$24,999	0.279	0.448	0.173	0.378	-0.11	0.000
$25,000–$54,999	0.249	0.433	0.246	0.431	0.00	0.639
$55,000–$99,999	0.239	0.426	0.260	0.439	0.02	0.001
$100,000+	0.234	0.423	0.320	0.467	0.09	0.000
4-year college degree or more	0.357	0.479	0.478	0.500	0.12	0.000
High school graduate or less	0.311	0.463	0.207	0.405	-0.10	0.000
Employed	0.504	0.500	0.549	0.498	0.04	0.000
Unemployed	0.127	0.333	0.093	0.291	-0.03	0.000
Self-employed	0.066	0.248	0.068	0.252	0.00	0.600
Married	0.421	0.494	0.509	0.500	0.09	0.000
White	0.586	0.493	0.673	0.469	0.09	0.000
Black/African American	0.176	0.381	0.120	0.324	-0.06	0.000
Hispanic/Latino	0.143	0.350	0.107	0.309	-0.04	0.000
Asian/Asian American	0.042	0.201	0.061	0.239	0.02	0.000
Democrat	0.426	0.495	0.438	0.496	0.01	0.135
Republican	0.273	0.445	0.289	0.453	0.02	0.028
Independent	0.301	0.459	0.273	0.446	-0.03	0.000
Voted for Clinton in 2016	0.279	0.448	0.518	0.500	0.24	0.000
Voted for Trump in 2016	0.275	0.447	0.474	0.499	0.20	0.000
Voted for Biden in 2020	0.342	0.474	0.616	0.486	0.27	0.000
Voted for Trump in 2020	0.234	0.423	0.383	0.486	0.15	0.000

Notes: The table displays summary statistics for those who started but did not finish and those who finished the survey. The sample includes only respondents who consented to participate and were not screened out due to demographic quotas. We present *p*-values of the differences between the two subsamples for each covariate.

Table A5: Covariate Balance for Respondents Missing Ancestors' Information

	Parents' location	Grandparents' location	Father's income	Grandfather's income
Proportion missing	0.008	0.074	0.143	0.338
Male	0.09 (0.026)	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 (0.103)	0.02 (0.028)	-0.02 (0.001)	-0.05 (0.000)
40–49 years old	-0.03 (0.307)	-0.01 (0.358)	-0.03 (0.000)	-0.03 (0.000)
50–59 years old	-0.08 (0.001)	-0.03 (0.004)	-0.01 (0.050)	0.00 (0.420)
60+ years old	-0.20 (0.000)	-0.06 (0.000)	0.01 (0.296)	0.06 (0.000)
$0–$24,999	0.26 (0.000)	0.13 (0.000)	0.18 (0.000)	0.09 (0.000)
$25,000–$54,999	-0.08 (0.007)	0.01 (0.310)	0.05 (0.000)	0.05 (0.000)
$55,000–$99,999	-0.09 (0.002)	-0.04 (0.000)	-0.06 (0.000)	-0.03 (0.000)
$100,000+	-0.09 (0.006)	-0.10 (0.000)	-0.17 (0.000)	-0.11 (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 (0.909)	0.00 (0.518)	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 (0.016)
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 (0.097)	0.01 (0.082)	-0.01 (0.082)
Asian/Asian American	0.02 (0.349)	-0.02 (0.004)	-0.01 (0.003)	-0.01 (0.108)
Democrat	-0.06 (0.155)	0.00 (0.904)	0.00 (0.935)	-0.01 (0.295)
Republican	-0.13 (0.000)	-0.08 (0.000)	-0.07 (0.000)	-0.05 (0.000)
Independent	0.18 (0.000)	0.08 (0.000)	0.07 (0.000)	0.05 (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 are in parentheses. Missing parents' location refers to respondents for whom location for *both* parents is missing, and missing grandparents' location refers to respondents for whom location for *all four* grandparents is missing.

Appendix B. Data Construction and Description

Variable	Description	Source
Zero-sum index	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
Adjusted zero-sum index (income)	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 non-U.S. citizens do better economically, this is at the expense of citizens". Variable is normalized to be between 0 and 1.	Survey
Adjusted zero-sum index (ethnic)	First principal component of agreement with the following statements: "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
Adjusted zero-sum index (citizen)	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". Variable is normalized to be between 0 and 1.	Survey
Pro-redistribution index	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 normalized to be between 0 and 1.	Survey
Race attitudes index	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 normalized to be between 0 and 1.	Survey
Gender attitudes index	First principal component of agreement with the following statements: "Women in the U.S. experience discrimination"; "Women should be given hiring preference". Variable is normalized to be between 0 and 1.	Survey
Anti-immigration index	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 normalized to be between 0 and 1.	Survey
Luck more important than effort	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 normalized to be between 0 and 1.	Survey
Perceived mobility	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 normalized to be between 0 and 1.	Survey

Variable	Description	Source
Universalist morals	First principal component of two questions that capture how the respondent would split $100 between a member of their organizations and a random person in the U.S., and how they would split $100 between a random person anywhere in the world and a random person in the U.S. Variable is normalized to be between 0 and 1.	Survey (waves 5-7)
Tradition is important	Captures 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 normalized to be between 0 and 1.	Survey (waves 5-7)
Generalized trust	Captures agreement with the statement "Would you say that most people can be trusted?" Variable is normalized to be between 0 and 1.	Survey (waves 5-7)
Abortions should be legal	Measures sentiment towards abortion with the question "Should abortions be legal?". Respondents could choose: (1) Legal under any circumstances; (2) Legal only under certain circumstances; (3) Illegal in all circumstances. Variable is oriented so it is increasing in preference for abortion being legal and normalized to be between 0 and 1.	Survey (waves 5-7)
Gov. should invest in infrastructure	Captures agreement on a 5-point scale with the statement "Government should invest in infrastructure." Variable is normalized to be between 0 and 1.	Survey
Gov. should spend more on defense and national security	Captures agreement on a 5-point scale with the statement "Government should spend more on defense and national security." Variable is normalized to be between 0 and 1.	Survey
Laws covering the sale of firearms should be made more strict	Captures agreement on a 3-point scale with the statement "Laws covering the sale of firearms should be made more strict." Variable is normalized to be between 0 and 1.	Survey
Zero-sum thinking (WVS)	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."	WVS (var. E041, waves 2, 3, 5, 6) and survey (waves 5-7)
Political beliefs (WVS)	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?"	WVS (var. E033)
Incomes should be more equal (WVS)	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)
Government should take more responsibility to provide for everyone (WVS)	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)
Government should prohibit immigrants (WVS)	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. Variable is oriented so it is increasing in preference for immigration restrictions, and is normalized to be between 0 and 1.	WVS (var. E143, waves 3-5)

Variable	Description	Source
Don't want immigrant neighbors (WVS)	Respondents were given a list of groups and asked "Could you please mention any that you would not like to have as neighbors?"; this variable is 1 if the respondent mentioned "Immigrants/foreign workers" and 0 otherwise.	WVS (var. A124_06, waves 1-7)
Luck more important than effort (WVS)	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." Variable is normalized to be between 0 and 1.	WVS (var. F198, wave 5)
Perceived mobility (WVS)	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." Variable is normalized to be between 0 and 1.	WVS (var. F198, wave 3)
Universalist morals (WVS)	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 normalized to be between 0 and 1. If one component of the average is missing for a particular observation, it is not included in the average.	WVS
Tradition is important (WVS)	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." Variable is normalized to be between 0 and 1.	WVS (var. A198, waves 5-6)
Generalized trust (WVS)	Measures trust with the question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" Respondents could choose "Most people can be trusted" or "Need to be very careful." Variable is normalized to be between 0 and 1.	WVS (var. A165)
Per-capita GDP growth	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
Percentage change in bottom 50% income	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
Parents to respondent mobility	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
Grandparents to respondent mobility	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

Variable	Description	Source
Great-grandparents to respondent mobility	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
Grandparents to parents mobility	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
Great-grandparents to grandparents mobility	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
Occupational status index	First principal component of occupational income score (based on the 1950 census), Duncan socio-economic index (based on the 1950 census and a 1947 survey), Siegel prestige score (based on 1960s surveys), occupational earnings score and educational score (based on the 1950 census), and Nam-Powers-Boyd occupational status score (based on the 1950 census). All variables use the 1950 occupational classification basis.	IPUMS
Respondent immigrated	Indicator variable that equals 1 if the respondent was born outside the U.S.	Survey
Parent immigrated	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
Grandparent immigrated	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
Enslaved ancestor	Indicator variable that equals 1 if the respondent reports having an ancestor who was enslaved at any point during the ancestor's lifetime.	Survey
Respondent's county foreign share	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 and 19.	U.S. Census
Parents' counties foreign share	Proportion of individuals who were born outside of the U.S. over the 1860 to 1920 period, averaged over the counties where the respondent's parents grew up between ages 7 and 17.	U.S. Census
Grandparents' counties foreign share	Proportion of individuals who were born outside of the U.S. over the 1860 to 1920 period, averaged over the counties where the respondent's grandparents grew up between ages 7 and 17.	U.S. Census
Respondent's county enslaved share	Proportion of individuals who were enslaved in 1860 in the county where the respondent grew up between ages 10 and 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
Parents' counties enslaved share	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

Variable	Description	Source
Grandparents' counties enslaved share	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
Respondent's county southern white/Black share, 1900-1940	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)
Parents' counties southern white/Black share, 1900-1940	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 where the respondent's parents grew up between ages 7 and 17.	Bazzi et al. (2020)
Grandparents' counties southern white/Black share, 1900-1940	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 where the respondent's grandparents grew up between ages 7 and 17.	Bazzi et al. (2020)
Respondent's county Confederate Culture Index (0-4)	Index that combines information on whether a county had Confederate memorials, a KKK chapter, a United Daughters of the Confederacy chapter, and recorded lynchings of Black individuals. Measured for the county where the respondent grew up between ages 10 and 19.	Bazzi et al. (2023)
Parents' counties Confederate Culture Index (0-4)	Index that combines information on whether a county had Confederate memorials, a KKK chapter, a United Daughters of the Confederacy chapter, and recorded lynchings 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)
Grandparents' counties Confederate Culture Index (0-4)	Index that combines information on whether a county had Confederate memorials, a KKK chapter, a United Daughters of the Confederacy chapter, and recorded lynchings 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 parent's 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

		Eigenvalues		Factor Loadings			
Index	Variable	1st PC	2nd PC	1st PC	2nd PC	Cronbach's α	KMO
Zero-sum index		2.30	0.77			0.75	0.75
	If non-U.S. citizens do better economically, this is at the expense of citizens			0.40	0.89		
	If an ethnic group becomes richer, this comes at the expense of other groups			0.55	-0.26		
	If one income class becomes wealthier, it is at the expense of others			0.52	-0.38		
	In international trade, if one country makes more money, then the other makes less			0.52	-0.03		
Adjusted zero-sum index (income)		1.83	0.71			0.67	0.63
	If non-U.S. citizens do better economically, this is at the expense of citizens			0.51	0.86		
	If an ethnic group becomes richer, this comes at the expense of other groups			0.60	-0.42		
	In international trade, if one country makes more money, then the other makes less			0.61	-0.30		
Adjusted zero-sum index (ethnic)		1.76	0.73			0.64	0.62
	If non-U.S. citizens do better economically, this is at the expense of citizens			0.52	0.83		
	If one income class becomes wealthier, it is at the expense of others			0.59	-0.53		
	In international trade, if one country makes more money, then the other makes less			0.62	-0.20		
Adjusted zero-sum index (citizen)		2.06	0.53			0.77	0.69
	If an ethnic group becomes richer, this comes at the expense of other groups			0.60	0.14		
	If one income class becomes wealthier, it is at the expense of others			0.57	0.61		
	In international trade, if one country makes more money, then the other makes less			0.56	-0.78		
Pro-redistribution index		3.17	0.89			0.82	0.83
	Disagree with allowing wealth accumulation			0.34	-0.60		
	Gov. should spend on income support for poor			0.42	0.16		
	Gov. should equalize opportunity			0.45	0.30		
	Gov. should equalize outcome			0.45	0.32		
	Rich pay too little tax minus poor pay too little			0.34	-0.63		
	Universal healthcare			0.43	0.16		
Race attitudes index		1.52	0.48			0.68	0.50
	Slavery makes it hard for Blacks to escape poverty			0.71	-0.71		
	Racism is a problem			0.71	0.71		
Anti-immigration index		1.19	0.81			0.31	0.50
	Important for being American: Born in U.S.			0.71	-0.71		
	Disagree with increasing immigration			0.71	0.71		
Gender attitudes index		1.49	0.51			0.64	0.50
	Women experience discrimination			0.71	-0.71		
	Women should be given hiring preference			0.71	0.71		
Luck more important than effort		1.43	0.93			0.38	0.54
	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		1.98	1.40				
	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		
Universalist morals		1.12	0.88			0.22	0.50
	Money to member of organization			0.71	0.71		
	Money to U.S. person			0.71	-0.71		

Notes: The table shows eigenvalues and factor loadings for the first two principal components for each of the component questions for the zero-sum indices, policy view indices, and indices of other fundamental attitudes. We also report Cronbach's α and the Kaiser–Meyer–Olkin index for each measure.

Table B3: Summary Statistics for Survey Variables

Variable	Mean	Std. dev.	Observations
Zero-sum index	0.51	0.21	20,278
Adjusted zero-sum index (income)	0.50	0.22	20,293
Adjusted zero-sum index (ethnic)	0.53	0.21	20,282
Adjusted zero-sum index (citizen)	0.52	0.23	20,296
Pro-redistribution index	0.62	0.22	20,292
Rich pay too little tax minus poor pay too little	0.72	0.26	20,316
Universal healthcare	0.69	0.33	20,338
Disagree with allowing wealth accumulation	0.40	0.30	20,346
Gov. should spend on income support for poor	0.66	0.28	20,341
Gov. should equalize outcome	0.56	0.31	20,332
Gov. should equalize opportunity	0.65	0.29	20,337
Anti-immigration index	0.52	0.24	20,331
Disagree with increasing immigration	0.48	0.29	20,338
Important for being American: Born in U.S.	0.57	0.35	20,337
Race attitudes index	0.59	0.27	20,300
Racism is a problem	0.62	0.30	20,332
Slavery makes it hard for Blacks to escape poverty	0.56	0.33	20,312
Gender attitudes index	0.56	0.25	20,333
Women should be given hiring preference	0.53	0.28	20,341
Women experience discrimination	0.58	0.29	20,336
Luck more important than effort	0.61	0.21	20,296
In the U.S. everybody can be economically successful	3.55	1.16	20,344
Hard work and effort have paid off	2.22	0.62	20,301
Disagree with success in life is outside one's control	3.22	1.12	20,347
Perceived mobility	0.67	0.19	20,352
Poor family to 1st quintile	29.20	23.19	20,352
Poor family to 2nd quintile	21.40	13.42	20,352
Poor family to 3rd quintile	23.68	17.88	20,352
Poor family to 4th quintile	12.30	10.76	20,352
Poor family to 5th quintile	13.42	18.36	20,352
Universalist morals	0.40	0.20	8,819
Money to member of organization	59.68	27.22	8,819
Money to U.S. person	60.45	26.57	8,819
Tradition is important	0.41	0.31	8,811
Generalized trust	0.29	0.46	8,436
Trust in government	0.35	0.22	20,345
Importance of religion	0.62	0.37	8,797
Zero-sum thinking (WVS)	6.50	2.69	8,810
Respondent immigrated	0.07	0.26	20,352
Parent immigrated	0.12	0.33	20,190
Grandparent immigrated	0.17	0.37	18,775
Enslaved ancestor	0.11	0.31	20,341
Parents to respondent mobility	0.21	1.27	19,579
Grandparents to respondent mobility	0.53	1.37	17,339
Great-grandparents to respondent mobility	0.64	1.38	13,393
Grandparents to parents mobility	0.31	1.13	17,305
Great-grandparents to grandparents mobility	0.12	0.89	13,287
Abortions should be legal	0.66	0.32	8,737
Gov. should invest in infrastructure	0.69	0.23	20,329
Gov. should spend more on defense and national security	0.57	0.29	20,333
Laws covering the sale of firearms should be made more strict	0.73	0.36	20,339

Notes: The table shows summary statistics for the main survey variables.

Table B4: Summary Statistics for County-Level Variables

Variable	Mean	Std. dev.	Observations
Respondent's county enslaved share	0.07	0.15	18,369
Parents' counties enslaved share	0.07	0.15	16,341
Grandparents' counties enslaved share	0.08	0.15	12,891
Respondent's county foreign share	0.17	0.12	17,572
Parents' counties foreign share	0.18	0.12	15,845
Grandparents' counties foreign share	0.16	0.12	12,522
Respondent's county southern white share	0.03	0.03	13,171
Parents' counties southern white share	0.02	0.03	12,284
Grandparents' counties southern white share	0.02	0.03	9,474
Respondent's county Confederate Culture Index	2.24	1.23	18,226
Parents' counties Confederate Culture Index	2.16	1.16	16,176
Grandparents' counties Confederate Culture Index	2.11	1.15	12,724

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: The table shows the correlations among six survey questions that measure zero-sum thinking. (+) 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: Correlations with Other Fundamental Attitudes

	Correlation with ZS	Std. err.
Luck more imp. than effort	-0.150	0.007
Perceived mobility	-0.136	0.007
More universalist	0.157	0.011
Tradition is important	0.126	0.012
Generalized trust	-0.013	0.012
Trust government	0.193	0.008

Notes: The table shows the correlation between the zero-sum index and six other fundamental attitudes or core beliefs previously explored in the literature.

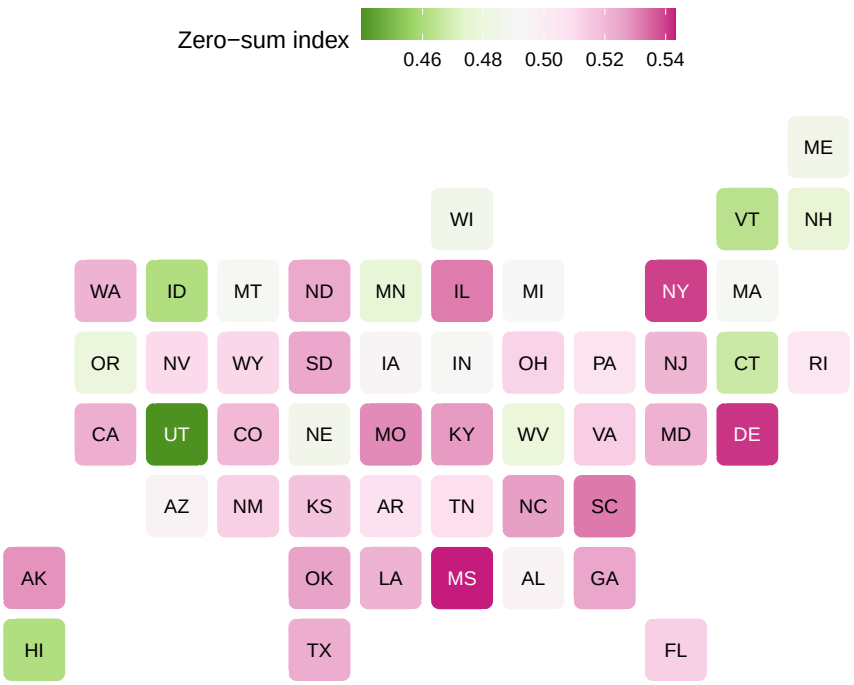


Figure C1: Average Zero-Sum Index by Respondent's State of Residence

Notes: The figure shows the average zero-sum index by the respondent's current state.

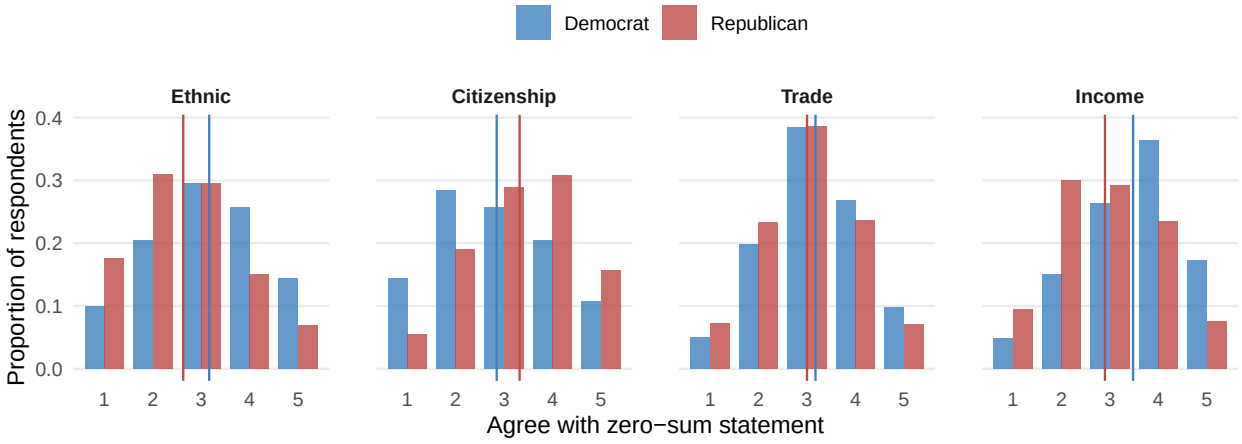


Figure C2: Responses to Zero-Sum Questions by Party

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.

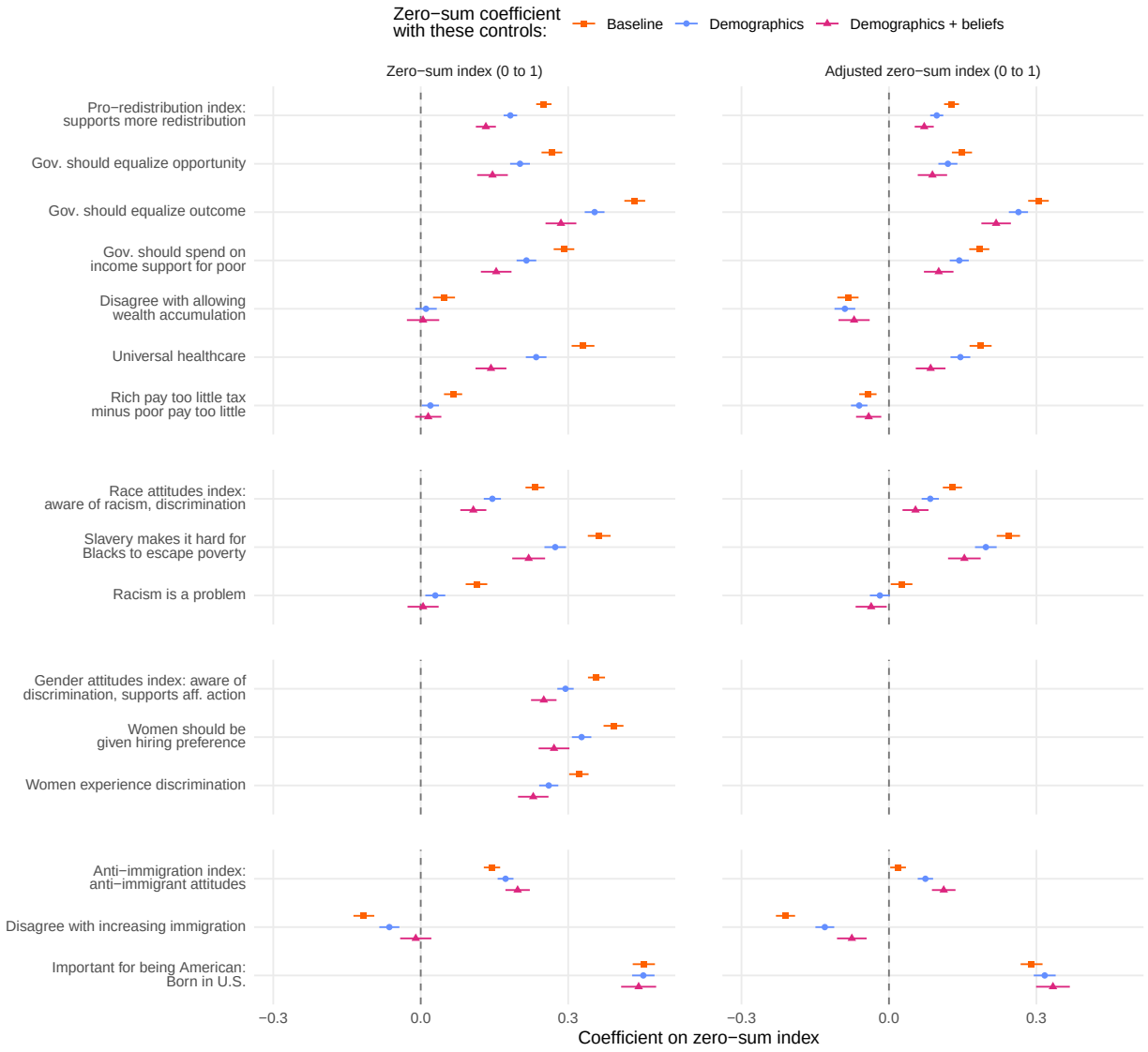


Figure C3: Zero-Sum Thinking and Policy Views, By Domain

Notes: Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for survey wave. The three estimates in each column correspond to (1) the baseline specification, as well as specifications that add (2) demographic controls: fixed effects for race, household income, educational attainment, party affiliation, and fixed effects for household income interacted with a quadratic in age, and (3) controls for other core beliefs: 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 beliefs controls are only available from the fifth wave of the survey onwards. Outcomes and regressors are normalized to be between zero and 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 (with the adjusted zero-sum index), the coefficient corresponds to the first principal component of three of the baseline questions, removing the one most similar to the policy outcome in that group – income for the redistribution outcomes, ethnic groups for the race outcomes, and citizenship for the immigration outcomes. Note that no component in the zero-sum index is closely related to gender equality. Indices of policy views are the first principal component of the relevant questions. See Section 3 for details. Horizontal bars are 95% confidence intervals.

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)	-0.050*** (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)	0.039** (0.019)	0.034* (0.019)	0.034 * (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)	-0.005 (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)	-0.0005 (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)	-0.006 (0.009)	-0.007 (0.009)
Born in U.S.	0.040*** (0.006)	0.041*** (0.006)	0.036*** (0.006)	0.037*** (0.006)
$25,000–$54,999		-0.017*** (0.004)	-0.017*** (0.004)	-0.016*** (0.004)
$55,000–$99,999		-0.029*** (0.004)	-0.028*** (0.004)	-0.028*** (0.004)
$100,000+		-0.026*** (0.005)	-0.026*** (0.005)	-0.027*** (0.005)
Some high school		0.033 (0.027)	0.029 (0.027)	0.032 (0.027)
High school degree/GED		0.035 (0.026)	0.031 (0.026)	0.033 (0.026)
Some college		0.015 (0.026)	0.008 (0.026)	0.010 (0.026)
2-year college degree		0.021 (0.026)	0.014 (0.026)	0.016 (0.026)
4-year college degree		0.006 (0.026)	-0.004 (0.026)	-0.002 (0.026)
Master's degree, M.B.A.		0.040 (0.026)	0.025 (0.026)	0.026 (0.026)
Ph.D., J.D., M.D.		0.064** (0.027)	0.046* (0.027)	0.046 * (0.027)
Strong Republican			0.006 (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	20,278	20,276	20,271	20,271
R2	0.079	0.086	0.099	0.103
Dep. Var. 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 reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

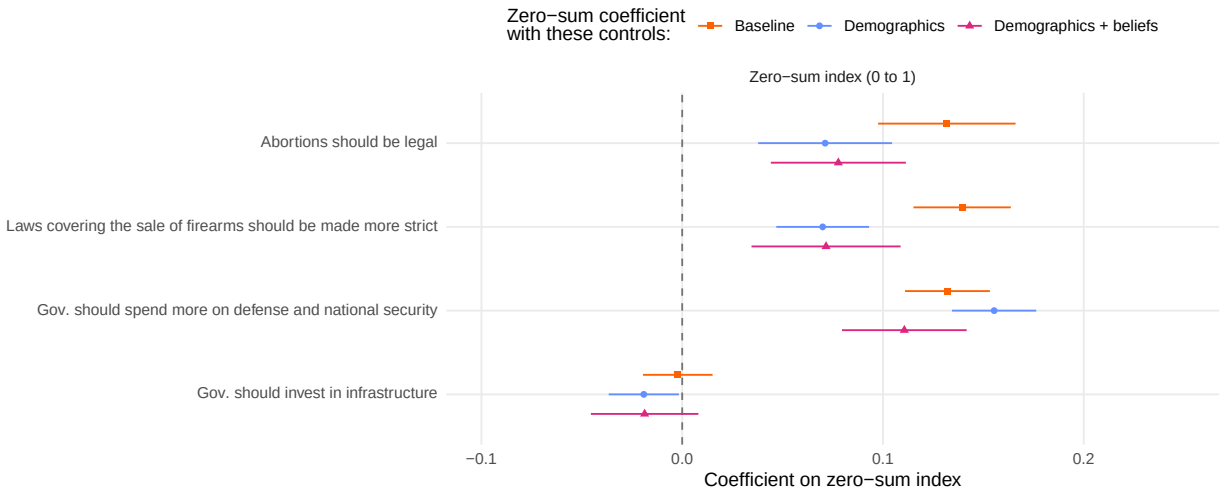


Figure C4: Zero-Sum Thinking and Policy Views – Other Policy Outcomes

Notes: Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for survey wave. The three estimates in each column correspond to (1) the baseline specification, as well as specifications that add (2) demographic controls: fixed effects for race, household income, educational attainment, party affiliation, and fixed effects for household income interacted with a quadratic in age, and (3) controls for other core beliefs: 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 beliefs controls are only available from the fifth wave of the survey onwards. Outcomes and regressors are normalized to be between zero and one. All variables are defined in Appendix B, with summary statistics in Table B3. 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. Horizontal bars are 95% confidence intervals.

Table C5: Zero-Sum Thinking and Puzzles Related to U.S. Politics and Policies

Sample	Voted for Trump in 2016		Anti-immigration index Democrats			Pro-redistribution index Republicans		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Zero-sum index (0 to 1)	0.1505***	0.1493***	0.2153***	0.2141***		0.4054***	0.4034***	
	(0.0153)	(0.0152)	(0.0121)	(0.0121)		(0.0122)	(0.0123)	
Adjusted zero-sum index (0 to 1)					0.1141***			0.3386***
					(0.0120)			(0.0126)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects		✓		✓	✓		✓	✓
Observations	8,157	8,157	8,221	8,221	8,229	5,846	5,846	5,851
R^2	0.074	0.083	0.176	0.186	0.162	0.303	0.310	0.267
Dependent variable mean	0.082	0.082	0.453	0.453	0.453	0.471	0.471	0.471
Dependent variable std. dev.	0.275	0.275	0.231	0.231	0.231	0.211	0.211	0.211

Notes: The table reports OLS estimates where the unit of observation is an individual. The sample in the first five columns is restricted to those who reported being moderate or strong Democrats, and the sample in the last three columns is restricted to moderate or strong Republicans. Demographic controls include age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. In column (5), we exclude the question about citizens and non-citizens from the zero-sum index, and in column (8), we exclude the question about income groups. 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.

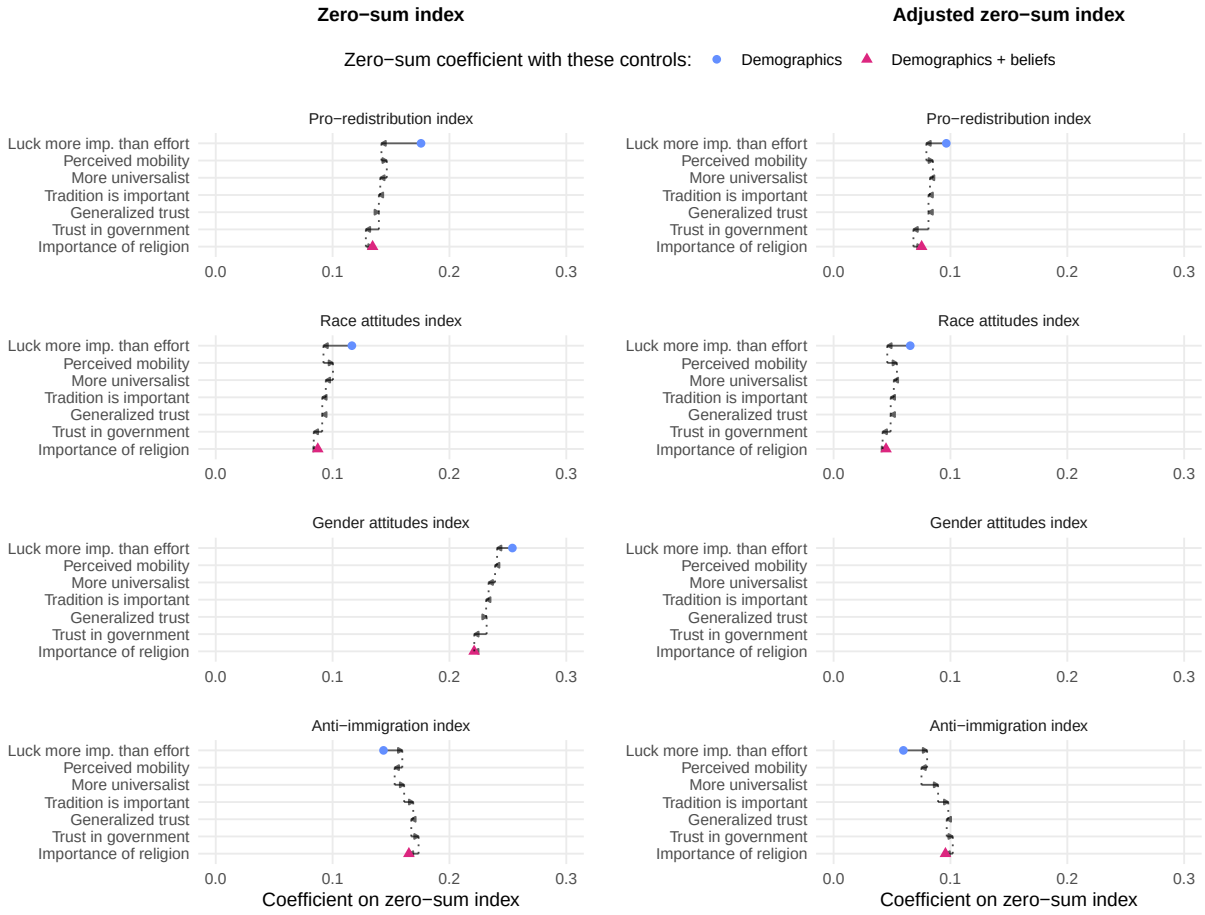


Figure C5: Gelbach Decompositions of Policy Views

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 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 beliefs in Figure 5, include whether luck is more important than effort, perceived mobility, moral universalism, whether tradition is important, trust in government, generalized trust, and the importance of religion. Demographic controls include age and age squared, gender, and their interaction, whether the respondent was born in the United States, respondent race, household income, educational attainment, party affiliation, and fixed effects for household income interacted with a quadratic in age; we also include fixed effects for survey wave. 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 (with the adjusted zero-sum index), the coefficient corresponds to the first principal component of three of the baseline questions, removing the one most similar to the policy outcome in that group – income for the redistribution outcomes, ethnic groups for the race outcomes, and citizenship for the immigration outcomes. Note that no component in the zero-sum index is closely related to gender equality. Indices of policy views are the first principal component of the relevant questions. See Section 3 for details.

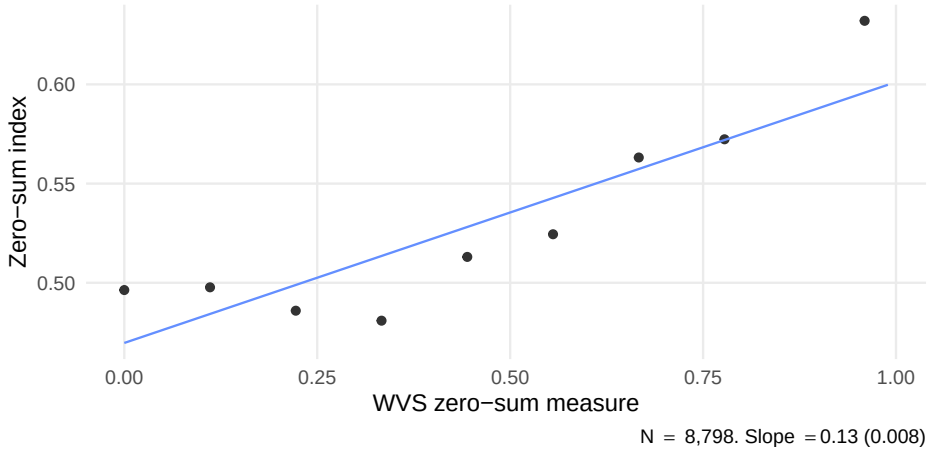


Figure C6: Zero-Sum Index and World Values Survey Measure of Zero-Sum Thinking

Notes: The figure reports a binscatter correlation plot (Cattaneo et al., 2024) 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.

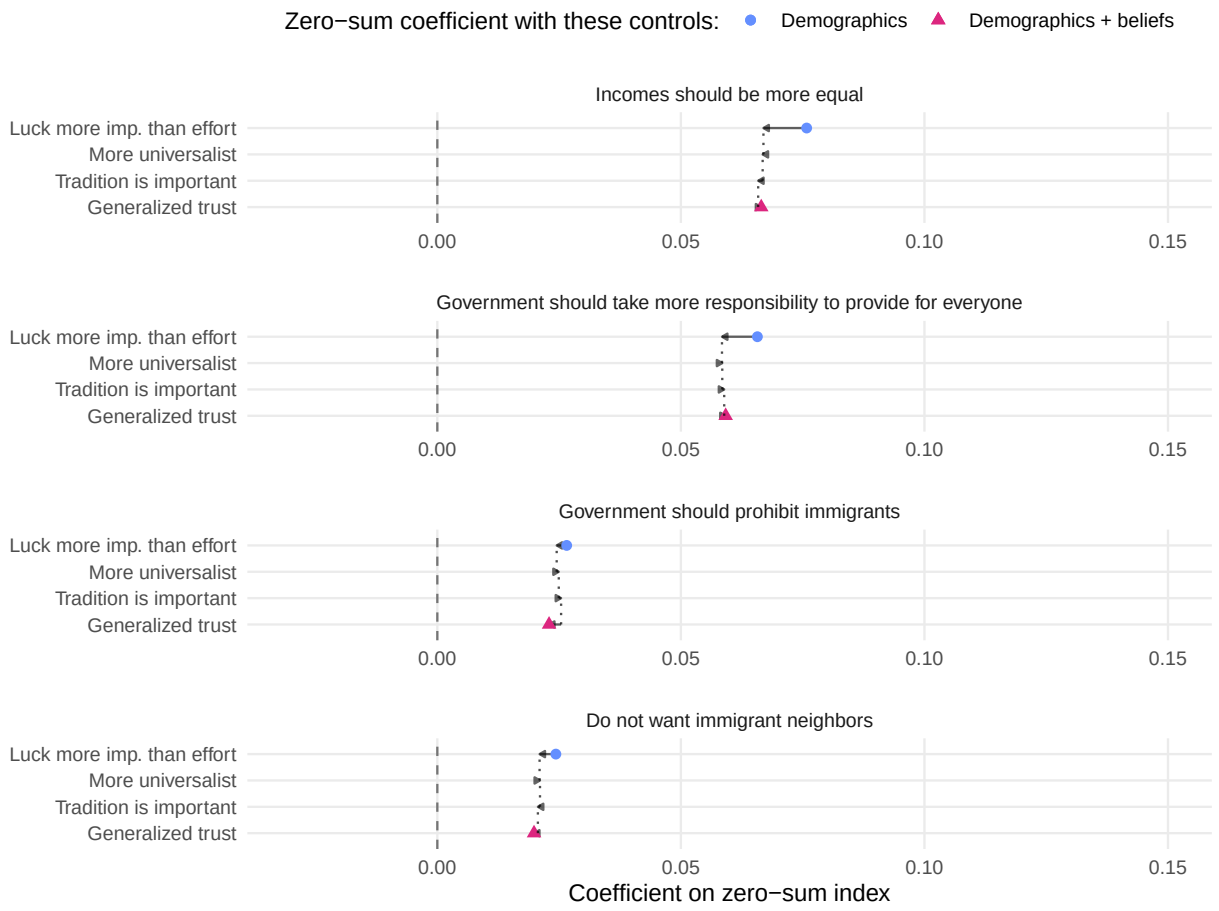


Figure C7: Gelbach Decompositions of Policy Views Across the World

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 four policy questions on the zero-sum index with 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 beliefs in Figure 8, are whether luck is more important than effort, moral universalism, whether tradition is important, and generalized trust. Demographic controls include age and age squared, gender, and their interaction, fixed effects for income, education, political affiliation (on a left-right scale), region, and fixed effects for household income interacted with a quadratic in age. We also include country-by-survey-wave fixed effects. Data are from the World Values Survey.

Table C6: Zero-Sum Thinking by Birth Cohort

	Zero-sum index (0 to 1)		
	(1)	(2)	(3)
Birth cohorts = 1945-1949	-0.0115	-0.0105	-0.0099
	(0.0114)	(0.0115)	(0.0114)
Birth cohorts = 1950-1954	-0.0019	-0.0017	-0.0012
	(0.0109)	(0.0109)	(0.0108)
Birth cohorts = 1955-1959	0.0197*	0.0193*	0.0200*
	(0.0109)	(0.0109)	(0.0109)
Birth cohorts = 1960-1964	0.0309***	0.0302***	0.0296***
	(0.0108)	(0.0108)	(0.0107)
Birth cohorts = 1965-1969	0.0434***	0.0426***	0.0425***
	(0.0108)	(0.0108)	(0.0107)
Birth cohorts = 1970-1974	0.0607***	0.0602***	0.0599***
	(0.0111)	(0.0111)	(0.0111)
Birth cohorts = 1975-1979	0.0931***	0.0923***	0.0914***
	(0.0111)	(0.0111)	(0.0111)
Birth cohorts = 1980-1984	0.1303***	0.1292***	0.1288***
	(0.0109)	(0.0109)	(0.0109)
Birth cohorts = 1985-1989	0.1182***	0.1170***	0.1165***
	(0.0111)	(0.0111)	(0.0110)
Birth cohorts = 1990-1994	0.0956***	0.0948***	0.0941***
	(0.0108)	(0.0108)	(0.0108)
Birth cohorts = 1995-1999	0.0922***	0.0919***	0.0900***
	(0.0109)	(0.0110)	(0.0110)
Birth cohorts = 2000-2004	0.1075***	0.1058***	0.1028***
	(0.0112)	(0.0112)	(0.0112)
Demographic controls	✓	✓	✓
Wave fixed effects	✓	✓	✓
State fixed effects		✓	✓
Race fixed effects			✓
Observations	20,122	20,122	20,122
R^2	0.100	0.104	0.109
Dependent variable mean	0.514	0.514	0.514
Dependent variable std. dev.	0.211	0.211	0.211

Notes: The table reports OLS estimates where the unit of observation is an individual. We include only individuals born in 1940 or later, and the omitted category for the birth cohort dummies is 1940-1945. Demographic controls include age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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.

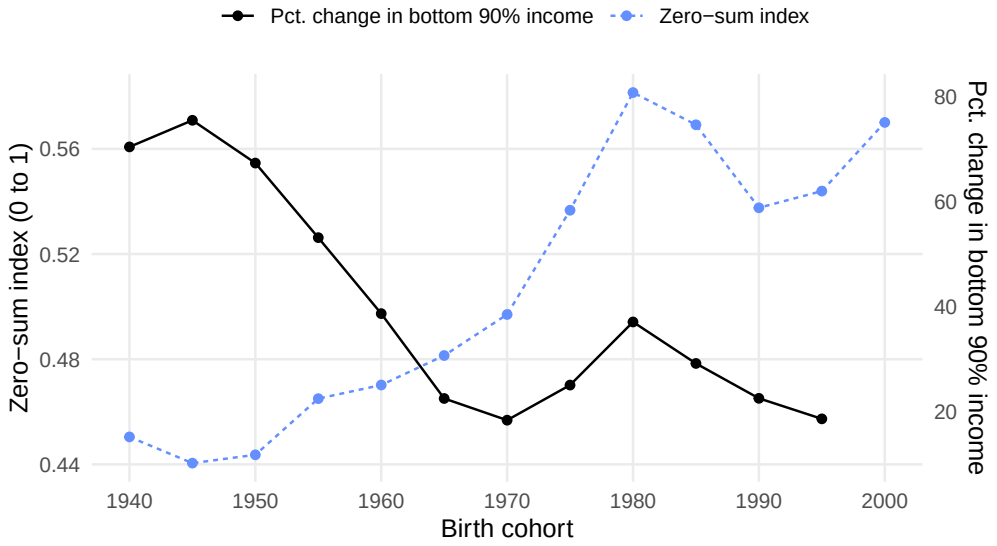


Figure C8: Economic Growth and Zero-Sum Thinking, By Birth Cohort, Bottom 90% Income Distribution

Notes: The black solid line is the percentage change in average income for the bottom 90% of the population during 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.

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)	(7)	(8)
Parents to respondent mobility	-0.0215***	-0.0217***	-0.0222***	-0.0332***				
	(0.0020)	(0.0020)	(0.0020)	(0.0030)				
Grandparents to parents mobility	-0.0193***	-0.0194***	-0.0198***	-0.0256***				
	(0.0024)	(0.0025)	(0.0025)	(0.0027)				
Great-grandpar. to grandparents mobility	-0.0135***	-0.0134***	-0.0142***	-0.0177***				
	(0.0030)	(0.0030)	(0.0030)	(0.0031)				
Great-grandpar. to respondent mobility					-0.0195***	-0.0197***	-0.0202***	-0.0256***
					(0.0017)	(0.0017)	(0.0017)	(0.0023)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓
Relative income control				✓				✓
Observations	7,679	7,679	7,679	7,679	7,794	7,794	7,794	7,794
R^2	0.132	0.138	0.144	0.147	0.131	0.136	0.142	0.144
Dependent variable mean	0.492	0.492	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	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. 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	-0.0123***	-0.0124***	-0.0190***						
	(0.0012)	(0.0012)	(0.0015)						
Grandparents to parents mobility				-0.0091***	-0.0090***	-0.0089***			
				(0.0014)	(0.0014)	(0.0014)			
Great-grandpar. to grandparents mobility							-0.0071***	-0.0074***	-0.0077***
							(0.0021)	(0.0021)	(0.0021)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects		✓	✓		✓	✓		✓	✓
Relative income control			✓			✓			✓
Observations	19,516	19,516	19,516	17,249	17,249	17,201	13,241	13,241	13,184
R^2	0.107	0.112	0.114	0.115	0.120	0.120	0.136	0.140	0.141
Dependent variable mean	0.513	0.513	0.513	0.516	0.516	0.515	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. 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 Occupational Mobility

(a) Occupational income score

	Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Father to resp. occ. mobility	-0.0307**	-0.0324**	-0.0339**			
	(0.0136)	(0.0140)	(0.0135)			
Grandfather to father occ. mobility	-0.0157	-0.0181	-0.0185			
	(0.0126)	(0.0119)	(0.0115)			
Grandfather to resp. occ. mobility				-0.0206*	-0.0228**	-0.0239**
				(0.0107)	(0.0106)	(0.0101)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓
Race fixed effects			✓			✓
Observations	3,405	3,405	3,405	3,514	3,514	3,514
R^2	0.165	0.176	0.178	0.167	0.177	0.180
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)	-0.1737**	-0.1831**	-0.1872**			
	(0.0803)	(0.0814)	(0.0803)			
Grandfather to father occ. mobility (PC)	-0.1853**	-0.1970**	-0.1939**			
	(0.0891)	(0.0816)	(0.0795)			
Grandfather to resp. occ. mobility (PC)				-0.1816***	-0.1924***	-0.1932***
				(0.0648)	(0.0639)	(0.0611)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓
Race fixed effects			✓			✓
Observations	3,173	3,173	3,173	3,363	3,363	3,363
R^2	0.171	0.181	0.184	0.171	0.182	0.185
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. In Panel (a), mobility is calculated using the 1950 occupational income score of the reported occupation, while in Panel (b), it is calculated using the first principal component of several measures of occupational status (Duncan Socioeconomic Index, Nam-Powers-Boyd occupational status score, occupational income score, Siegel prestige score, occupational earnings score, and the occupational educational score), all from IPUMS and using the 1950 occupational classification basis. Scores are measured in 1950 when possible; see Appendix for details. All measures are based on the respondent's described occupation (from an open response question), which is then matched to a Bureau of Labor Statistics broad Standard Occupational Classification (SOC) code. Demographic controls include age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the relevant generations' occupations' broad SOC codes. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

Table C10: Zero-Sum Thinking and Ancestral Economic Mobility, Controlling for Current Income

	Zero-sum index (0 to 1)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Parents to respondent mobility	-0.0220***	-0.0221***	-0.0222***	-0.0237***				
	(0.0016)	(0.0016)	(0.0016)	(0.0017)				
Grandparents to parents mobility	-0.0240***	-0.0241***	-0.0241***	-0.0248***				
	(0.0019)	(0.0019)	(0.0019)	(0.0019)				
Great-grandpar. to grandparents mobility	-0.0184***	-0.0182***	-0.0186***	-0.0190***				
	(0.0022)	(0.0022)	(0.0022)	(0.0022)				
Great-grandpar. to respondent mobility					-0.0217***	-0.0218***	-0.0219***	-0.0229***
					(0.0014)	(0.0014)	(0.0013)	(0.0014)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓
Current income control				✓				✓
Observations	13,131	13,131	13,131	13,130	13,349	13,349	13,349	13,348
R^2	0.147	0.153	0.157	0.158	0.147	0.152	0.156	0.157
Dependent variable mean	0.529	0.529	0.529	0.529	0.529	0.529	0.529	0.529
Dependent variable std. dev.	0.222	0.222	0.222	0.222	0.221	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. Demographic controls include age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. 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 Ancestral Economic Mobility: U.S. Only

	Zero-sum index (0 to 1)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Parents to respondent mobility	-0.0220***	-0.0221***	-0.0227***	-0.0489***				
	(0.0019)	(0.0019)	(0.0019)	(0.0027)				
Grandparents to parents mobility	-0.0261***	-0.0262***	-0.0266***	-0.0407***				
	(0.0022)	(0.0022)	(0.0022)	(0.0025)				
Great-grandpar. to grandparents mobility	-0.0223***	-0.0222***	-0.0228***	-0.0309***				
	(0.0027)	(0.0027)	(0.0027)	(0.0027)				
Great-grandpar. to respondent mobility					-0.0229***	-0.0231***	-0.0235***	-0.0394***
					(0.0016)	(0.0016)	(0.0016)	(0.0020)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓
Relative income control				✓				✓
Observations	9,733	9,733	9,733	9,733	10,085	10,085	10,085	10,085
R^2	0.152	0.160	0.165	0.184	0.152	0.161	0.166	0.182
Dependent variable mean	0.537	0.537	0.537	0.537	0.539	0.539	0.539	0.539
Dependent variable std. dev.	0.222	0.222	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. 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 C12: 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	-0.0347***	-0.0336***	-0.0333***
	(0.0017)	(0.0017)	(0.0017)
Enslaved ancestor		0.0854***	0.0899***
		(0.0060)	(0.0062)
Parent immigrated			-0.0307***
			(0.0065)
Grandparent immigrated			0.0058
			(0.0050)
Demographic controls	✓	✓	✓
Wave fixed effects	✓	✓	✓
State fixed effects	✓	✓	✓
Race fixed effects	✓	✓	✓
Relative income control	✓	✓	✓
Observations	13,349	13,344	12,719
R^2	0.167	0.180	0.184
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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. 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, By Gender of Respondent

	Zero-sum index (0 to 1)					
	All		Male		Female	
	(1)	(2)	(3)	(4)	(5)	(6)
Parents to respondent mobility	-0.0466***		-0.0566***		-0.0248***	
	(0.0023)		(0.0033)		(0.0033)	
Grandparents to parents mobility	-0.0382***		-0.0459***		-0.0210***	
	(0.0021)		(0.0031)		(0.0028)	
Great-grandpar. to grandparents mobility	-0.0267***		-0.0278***		-0.0190***	
	(0.0023)		(0.0032)		(0.0031)	
Great-grandpar. to respondent mobility		-0.0366***		-0.0426***		-0.0214***
		(0.0017)		(0.0024)		(0.0024)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
Relative income control	✓	✓	✓	✓	✓	✓
Observations	13,131	13,349	6,891	6,997	6,240	6,352
R^2	0.165	0.160	0.221	0.213	0.118	0.117
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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. 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 Ancestral Economic Mobility, Mother's Line, By Gender of Respondent

	Zero-sum index (0 to 1)					
	All		Male		Female	
	(1)	(2)	(3)	(4)	(5)	(6)
Parents to respondent mobility	-0.0432***		-0.0546***		-0.0207***	
	(0.0023)		(0.0034)		(0.0032)	
Grandparents to parents mobility	-0.0294***		-0.0361***		-0.0146***	
	(0.0020)		(0.0031)		(0.0027)	
Great-grandpar. to grandparents mobility	-0.0220***		-0.0262***		-0.0118***	
	(0.0021)		(0.0031)		(0.0028)	
Great-grandpar. to respondent mobility		-0.0301***		-0.0372***		-0.0147***
		(0.0017)		(0.0025)		(0.0023)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
Relative income control	✓	✓	✓	✓	✓	✓
Observations	13,896	14,094	7,028	7,110	6,868	6,984
R^2	0.147	0.141	0.207	0.199	0.104	0.101
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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. 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 Ancestral Economic Mobility, Separately for Downward and Upward Mobility

	Zero-sum index (0 to 1)							
	Downward				Upward			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Great-grandpar. to respondent mobility	-0.0002	-0.0014	-0.0008	-0.0122	-0.0226***	-0.0225***	-0.0228***	-0.0302***
	(0.0069)	(0.0069)	(0.0069)	(0.0079)	(0.0030)	(0.0030)	(0.0030)	(0.0034)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓
Relative income control				✓				✓
Observations	2,227	2,227	2,227	2,227	6,816	6,816	6,816	6,816
R^2	0.160	0.181	0.188	0.192	0.098	0.106	0.114	0.117
Dependent variable mean	0.554	0.554	0.554	0.554	0.491	0.491	0.491	0.491
Dependent variable std. dev.	0.219	0.219	0.219	0.219	0.211	0.211	0.211	0.211

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. We split the sample into two groups: those whose relative economic standing decreased between their great-grandparents' household and their own household ("downward" mobility), and those whose relative economic standing increased ("upward" mobility). Those whose relative economic standing did not change between these two generations are not included. "Great-grandparents" refers to the parents of the respondent's paternal grandfather. Demographic controls include age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. 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 Immigration, Variables Included Individually

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent immigrated	-0.0415***	-0.0421***	-0.0343***						
	(0.0056)	(0.0057)	(0.0062)						
Parent immigrated				-0.0243***	-0.0246***	-0.0180***			
				(0.0045)	(0.0045)	(0.0048)			
Grandparent immigrated							0.0055	0.0070*	0.0081**
							(0.0040)	(0.0040)	(0.0040)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	20,271	20,271	20,271	20,114	20,114	20,114	18,708	18,708	18,708
R^2	0.104	0.109	0.113	0.104	0.109	0.114	0.105	0.110	0.116
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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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 C17: Zero-Sum Thinking and County Foreign Share 1860-1920, With Immigrant Generation Controls. Only respondents whose grandparents grew up between 1870 and 1920

	Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county foreign share	0.0070	0.0113	0.0116						
	(0.0256)	(0.0261)	(0.0272)						
Parents' counties foreign share				-0.0586**	-0.0554**	-0.0587*			
				(0.0274)	(0.0267)	(0.0301)			
Grandparents' counties foreign share							-0.0478***	-0.0490***	-0.0487***
							(0.0178)	(0.0177)	(0.0162)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Child of immigrant		✓	✓		✓	✓		✓	✓
Grand-child of immigrant			✓			✓			✓
Observations	4,867	4,848	4,642	4,567	4,566	4,376	3,824	3,823	3,823
R^2	0.095	0.096	0.096	0.108	0.108	0.108	0.107	0.108	0.108
Num. clusters	1,160	1,160	1,146	1,306	1,306	1,282	1,147	1,147	1,147
Dependent variable mean	0.480	0.480	0.477	0.480	0.480	0.478	0.480	0.480	0.480
Dependent variable std. dev.	0.205	0.205	0.204	0.205	0.205	0.205	0.205	0.205	0.205
Indep. variable mean	0.182	0.182	0.182	0.179	0.179	0.179	0.164	0.164	0.164
Indep. variable std. dev.	0.123	0.123	0.123	0.125	0.125	0.125	0.124	0.124	0.124

Notes: The table reports OLS estimates where the unit of observation is an individual. The sample is restricted to grandparents of respondents who lived between 1870 and 1920. "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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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 Race, With Enslaved Ancestors Controls

	Zero-sum index (0 to 1)				
	(1)	(2)	(3)	(4)	(5)
African American/Black	0.0451***	0.0162***	0.0415***	0.0148*	0.0200**
	(0.0049)	(0.0053)	(0.0074)	(0.0078)	(0.0081)
American Indian or Alaska Native	-0.0076	-0.0177	-0.0016	-0.0119	-0.0015
	(0.0152)	(0.0154)	(0.0184)	(0.0185)	(0.0185)
Asian/Asian American	-0.0183***	-0.0180***	-0.0154	-0.0160	-0.0143
	(0.0069)	(0.0069)	(0.0111)	(0.0111)	(0.0112)
Hispanic/Latino	-0.0019	-0.0029	-0.0040	-0.0043	-0.0050
	(0.0051)	(0.0051)	(0.0071)	(0.0071)	(0.0071)
Native Hawaiian or Other Pacific Islander	0.0075	-0.0053	0.0798***	0.0665**	0.0815***
	(0.0277)	(0.0289)	(0.0296)	(0.0311)	(0.0300)
Other race	-0.0050	-0.0164*	0.0039	-0.0084	-0.0026
	(0.0090)	(0.0090)	(0.0127)	(0.0129)	(0.0128)
Enslaved ancestor		0.0837***		0.0794***	
		(0.0054)		(0.0078)	
Enslavement of African descendants					0.0448***
					(0.0069)
Demographic controls	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓
Observations	20,263	20,263	8,790	8,790	8,790
R^2	0.113	0.125	0.151	0.163	0.156
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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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 C19: 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)
Respondent's county enslaved share	0.0468***	0.0340***	0.0352***						
	(0.0130)	(0.0130)	(0.0130)						
Parents' counties enslaved share				0.0748***	0.0485***	0.0479***			
				(0.0132)	(0.0141)	(0.0144)			
Grandparents' counties enslaved share							0.0762***	0.0425***	0.0369***
							(0.0143)	(0.0130)	(0.0125)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects		✓	✓		✓	✓		✓	✓
Enslaved ancestor			✓			✓			✓
Observations	18,302	18,302	18,295	16,290	16,290	16,284	12,848	12,848	12,847
R^2	0.089	0.094	0.101	0.106	0.110	0.118	0.108	0.112	0.126
Num. clusters	2,086	2,086	2,086	2,234	2,234	2,233	2,060	2,060	2,060
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	0.211	0.211	0.211

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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the respondent's county, father' county, or paternal grandfather's county, and are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

Table C20: 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	0.0233	0.0612	0.0893	0.0914								
	(0.0709)	(0.0760)	(0.0781)	(0.0767)								
Respondent's county southern Black share	0.9699***	0.8100***	0.5537*	0.5315*								
	(0.2738)	(0.2739)	(0.2965)	(0.2840)								
Parents' counties southern white share					0.1129*	0.1725***	0.1892***	0.1875***				
					(0.0603)	(0.0642)	(0.0651)	(0.0640)				
Parents' counties southern Black share					0.6248***	0.4576**	0.2223	0.1986				
					(0.2286)	(0.1988)	(0.2173)	(0.2073)				
Grandparents' counties southern white share									0.1981**	0.2437***	0.2471***	0.2434***
									(0.0814)	(0.0771)	(0.0744)	(0.0746)
Grandparents' counties southern Black share									0.4595***	0.3141**	0.1127	0.0862
									(0.1476)	(0.1417)	(0.1388)	(0.1362)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓			✓	✓
Enslaved ancestor				✓				✓				✓
Observations	13,131	13,131	13,131	13,126	12,247	12,247	12,247	12,243	9,445	9,445	9,445	9,444
R^2	0.091	0.096	0.102	0.109	0.101	0.108	0.115	0.122	0.105	0.116	0.122	0.135
Num. clusters	1,239	1,239	1,239	1,239	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)	0.0061***	0.0063***	0.0050***	0.0048***								
	(0.0014)	(0.0016)	(0.0017)	(0.0016)								
Parents' counties CCI (0 to 4)					0.0094***	0.0090***	0.0070***	0.0067***				
					(0.0015)	(0.0017)	(0.0016)	(0.0016)				
Grandparents' counties CCI (0 to 4)									0.0119***	0.0119***	0.0092***	0.0085***
									(0.0020)	(0.0024)	(0.0022)	(0.0022)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓			✓	✓
Enslaved ancestor				✓				✓				✓
Observations	18,160	18,160	18,160	18,153	16,125	16,125	16,125	16,119	12,681	12,681	12,681	12,680
R^2	0.086	0.090	0.095	0.102	0.101	0.106	0.111	0.119	0.104	0.110	0.115	0.128
Num. clusters	2,050	2,050	2,050	2,050	2,199	2,199	2,199	2,198	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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 C21: Zero-Sum Thinking and Growing Up in Counties With Confederate Culture: Separately for Black and White Respondents

	Zero-sum index (0 to 1)					
	Black			White		
	(1)	(2)	(3)	(4)	(5)	(6)
Respondent's county CCI (0 to 4)	0.0052			0.0062***		
	(0.0045)			(0.0020)		
Parents' counties CCI (0 to 4)		0.0060			0.0081***	
		(0.0043)			(0.0019)	
Grandparents' counties CCI (0 to 4)			0.0010			0.0106***
			(0.0052)			(0.0027)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Observations	2,146	1,964	1,544	12,668	12,104	9,794
R^2	0.067	0.075	0.087	0.107	0.117	0.120
Num. clusters	562	579	441	1,873	1,966	1,814
Dependent variable mean	0.568	0.575	0.576	0.495	0.497	0.499
Dependent variable std. dev.	0.196	0.196	0.201	0.207	0.210	0.212

Notes: The table reports OLS estimates where the unit of observation is an individual. We show results separately for Black respondents in columns 1-3 and white respondents in columns 4-6. "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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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 C22: 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	0.0788	0.1387*	0.1421**						
	(0.0693)	(0.0720)	(0.0717)						
Father's county southern white share				0.1350*	0.1812***	0.1709**			
				(0.0753)	(0.0684)	(0.0680)			
Grandfather's county southern white share							0.3529***	0.4225***	0.4024***
							(0.1127)	(0.1041)	(0.1017)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	13,131	13,131	13,131	10,491	10,491	10,491	6,278	6,278	6,278
R^2	0.087	0.094	0.101	0.102	0.112	0.119	0.122	0.137	0.144
Num. clusters	1,239	1,239	1,239	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)	0.0061***	0.0063***	0.0050***						
	(0.0014)	(0.0016)	(0.0017)						
Father's county CCI (0 to 4)				0.0082***	0.0075***	0.0057***			
				(0.0016)	(0.0017)	(0.0017)			
Grandfather's county CCI (0 to 4)							0.0106***	0.0103***	0.0084***
							(0.0021)	(0.0023)	(0.0023)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	18,160	18,160	18,160	14,346	14,346	14,346	9,001	9,001	9,001
R^2	0.086	0.090	0.095	0.103	0.109	0.114	0.116	0.125	0.130
Num. clusters	2,050	2,050	2,050	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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

Here, we examine the robustness of our main results to the respondents' level of attentiveness and care in answering the survey. 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 (part of) Table B2, 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 4, showing the density of the zero-sum index by party.
- Figure D4 reproduces Figure 5, showing correlations between the zero-sum index and policy views.
- Figure D5 reproduces Figure C5, showing a Gelbach decomposition of the effect of adding controls for other fundamental beliefs to a regression of policy views on the zero-sum index.
- Figure D6 reproduces Figure 9, showing the proportion of Democrats who voted for Donald Trump by zero-sum quartile.
- Figure D7 reproduces Figure 10, 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 2, showing the relationship between the zero-sum index and ancestral mobility.
- Table D3 reproduces Table 3, showing the relationship between the zero-sum index and the respondent's immigrant generation.
- Table D4 reproduces Table 4, 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 5, showing the relationship between the zero-sum index and the respondent's race.
- Table D6 reproduces Table 6, showing the relationship between the zero-sum index and the respondent's family's history of enslavement.

- Table D7 reproduces Table 8, 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 9, 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 10, 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.

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

Question	1st PC (Eigenvalue: 2.25)	2nd PC (Eigenvalue: 0.77)
Ethnicity	0.55	-0.26
Citizenship	0.40	0.90
Trade	0.52	-0.07
Income	0.52	-0.34

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

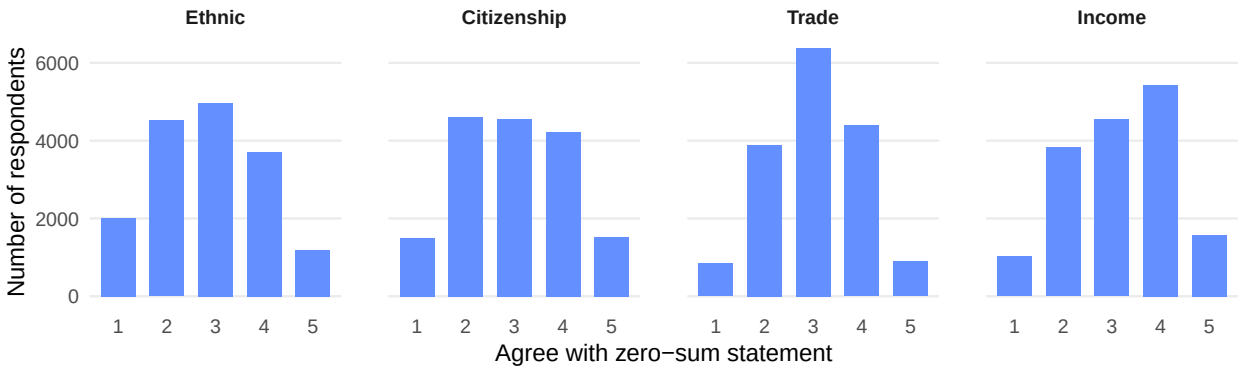


Figure D1: Distributions of Responses to Zero-Sum Questions

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.

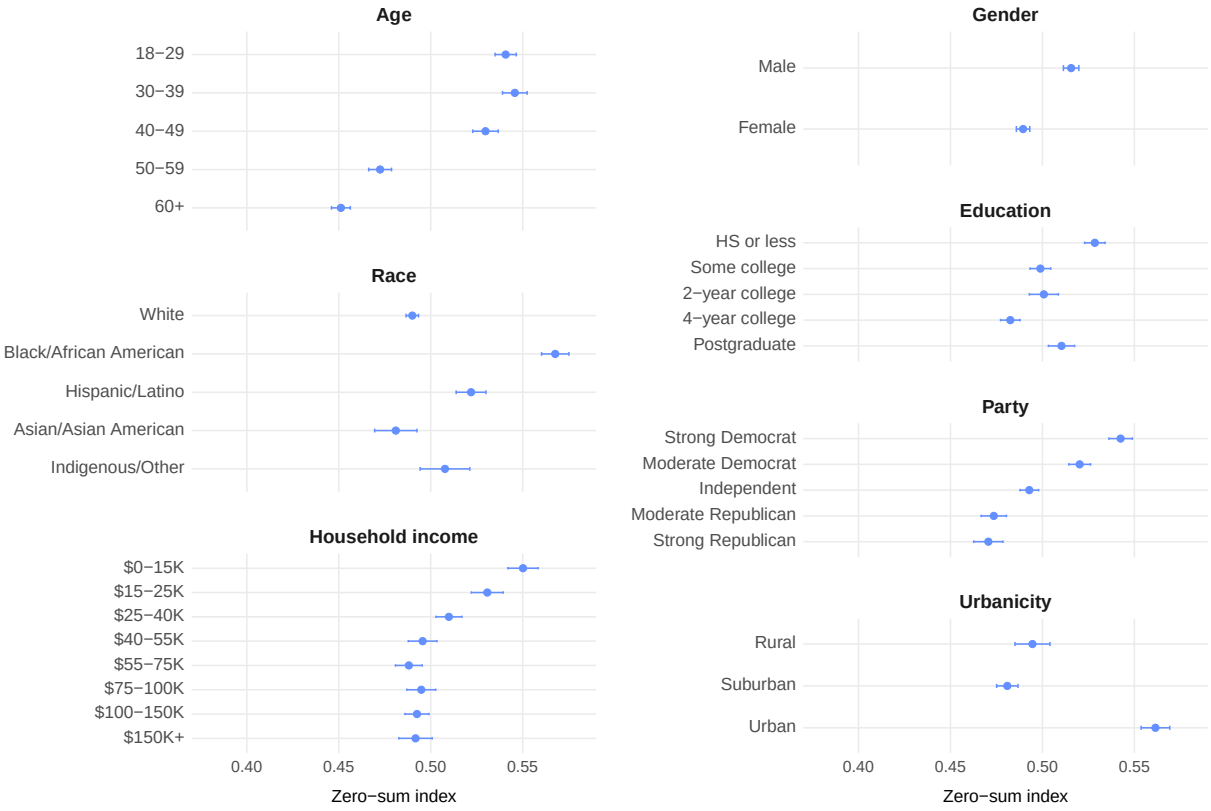


Figure D2: Average Zero-Sum Index by Demographic Group

Notes: Horizontal bars are 95% confidence intervals.

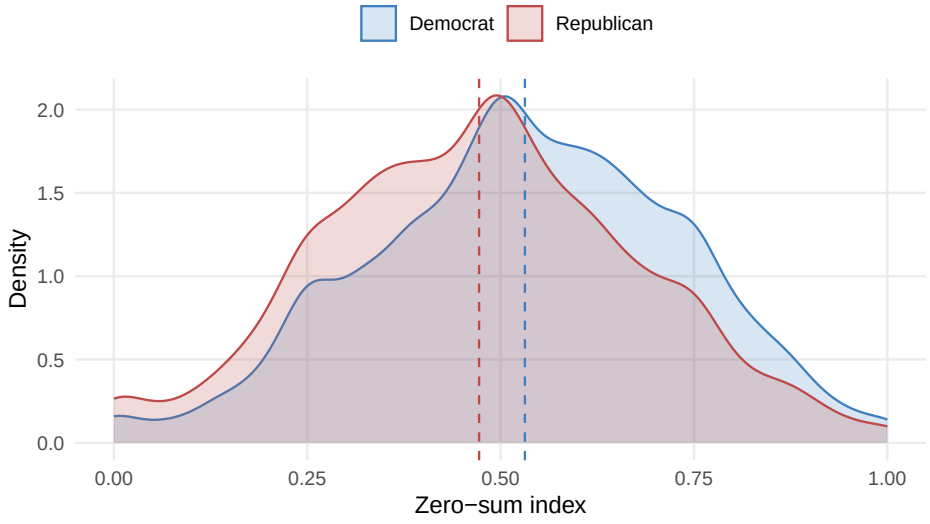


Figure D3: Density of Zero-Sum Index By Party

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.

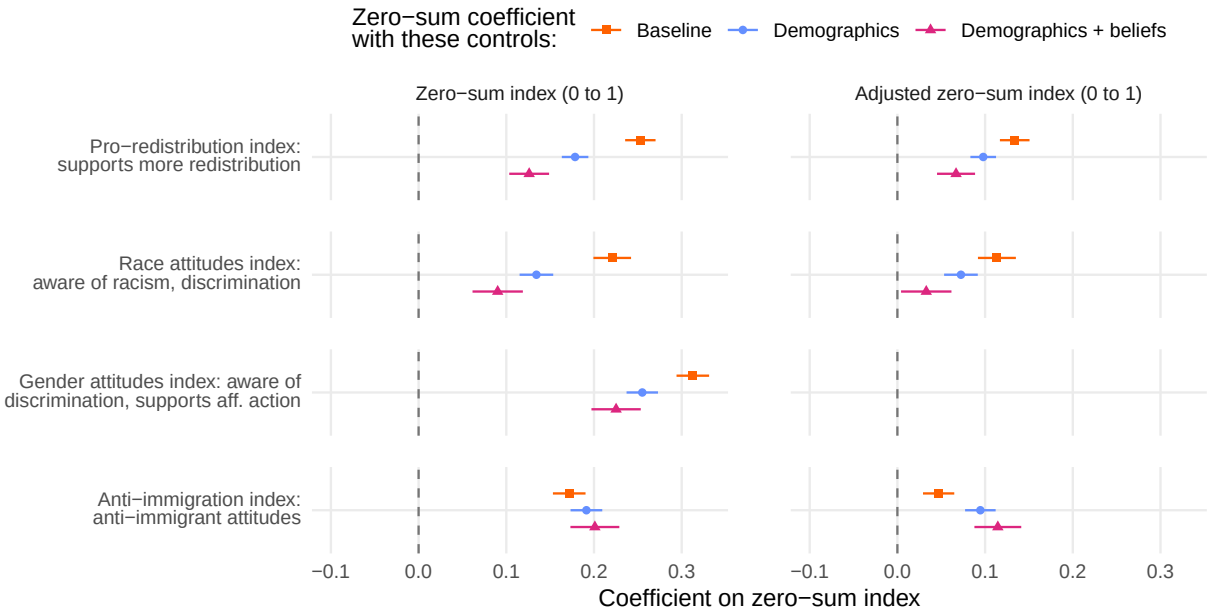


Figure D4: Zero-Sum Thinking and Policy Views

Notes: Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for survey wave. The three estimates in each column correspond to the baseline specification, as well as specifications that add (1) demographic controls: fixed effects for race, household income, educational attainment, party affiliation, and fixed effects for household income interacted with a quadratic in age, and (2) controls for other core beliefs: 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. Outcomes and regressors are normalized to be between zero and 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 (with the adjusted zero-sum index), the coefficient corresponds to the first principal component of three of the baseline questions, removing the one most similar to the policy outcome in that group – income for the redistribution outcomes, ethnic groups for the race outcomes, and citizenship for the immigration outcomes. Note that no component in the zero-sum index is closely related to gender equality. Indices of policy views are the first principal component of the relevant questions. See Section 3 for details. Horizontal bars are 95% confidence intervals.

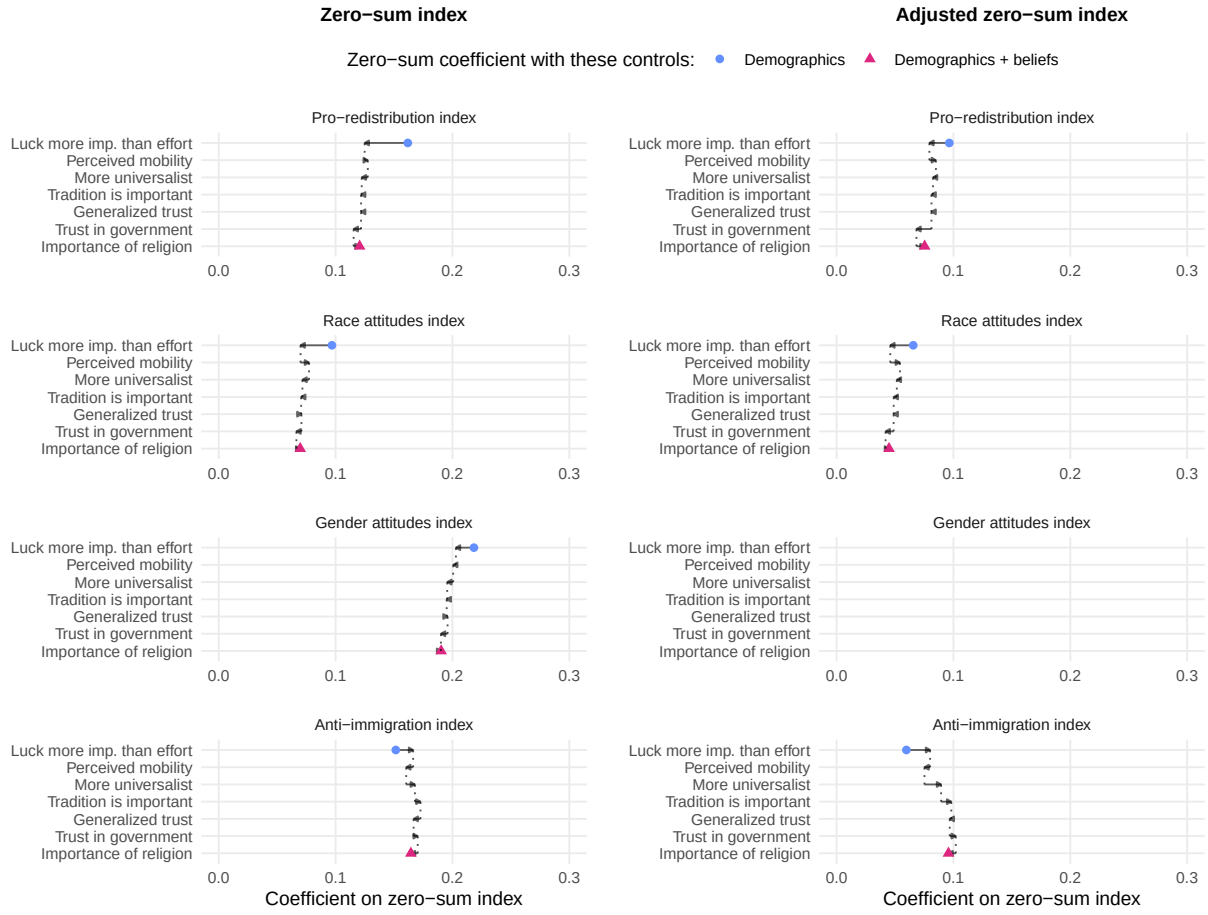


Figure D5: Gelbach Decompositions of Policy Views

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 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 5, include whether luck is more important than effort, perceived mobility, moral universalism, whether tradition is important, and generalized trust. Demographic controls include age and age squared, gender, and their interaction, whether the respondent was born in the United States, fixed effects for respondent race, household income, educational attainment, party affiliation, and fixed effects for household income interacted with a quadratic in age. 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 (with the adjusted zero-sum index), the coefficient corresponds to the first principal component of three of the baseline questions, removing the one most similar to the policy outcome in that group – income for the redistribution outcomes, ethnic groups for the race outcomes, and citizenship for the immigration outcomes. Note that no component in the zero-sum index is closely related to gender equality. Indices of policy views are the first principal component of the relevant questions. See Section 3 for details.

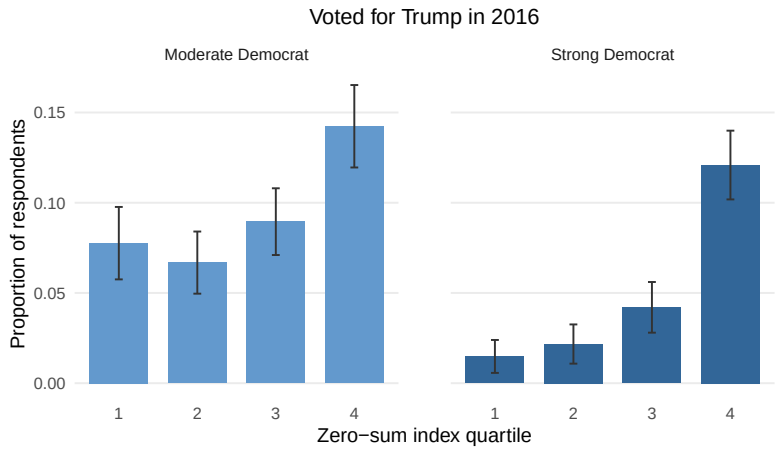
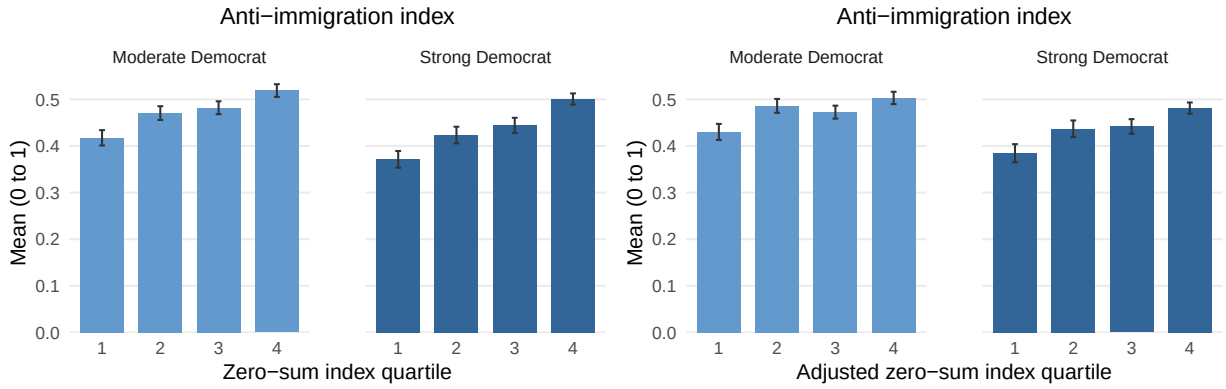
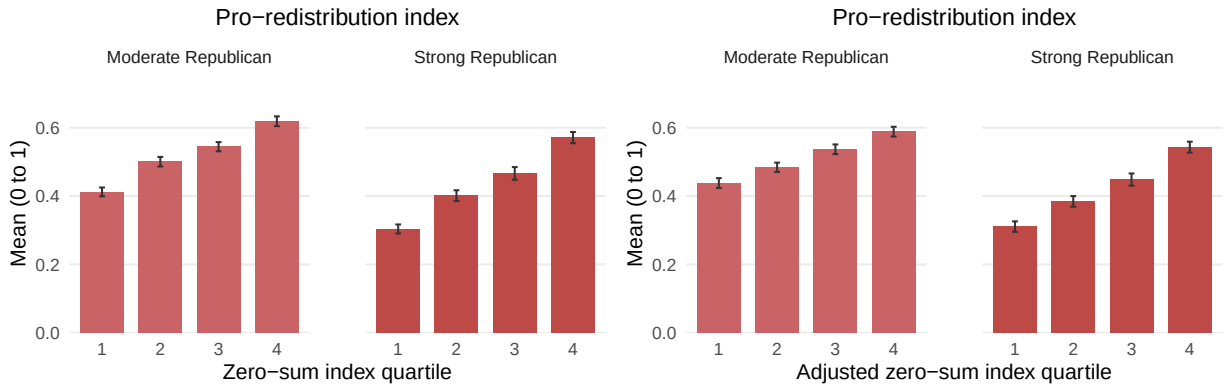


Figure D6: Democrats Voting for Trump by Zero-Sum Quartile

Notes: Vertical bars are 95% confidence intervals.



(a)



(b)

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

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)	(7)	(8)
Parents to respondent mobility	-0.0197***	-0.0197***	-0.0199***	-0.0306***				
	(0.0017)	(0.0017)	(0.0017)	(0.0025)				
Grandparents to parents mobility	-0.0208***	-0.0207***	-0.0209***	-0.0269***				
	(0.0020)	(0.0020)	(0.0020)	(0.0022)				
Great-grandpar. to grandparents mobility	-0.0148***	-0.0144***	-0.0150***	-0.0182***				
	(0.0023)	(0.0023)	(0.0023)	(0.0023)				
Great-grandpar. to respondent mobility					-0.0190***	-0.0189***	-0.0192***	-0.0247***
					(0.0014)	(0.0014)	(0.0014)	(0.0018)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓
Relative income control				✓				✓
Observations	10,554	10,554	10,554	10,554	10,717	10,717	10,717	10,717
R^2	0.125	0.132	0.137	0.142	0.125	0.131	0.136	0.140
Dependent variable mean	0.514	0.514	0.514	0.514	0.514	0.514	0.514	0.514
Dependent variable std. dev.	0.211	0.211	0.211	0.211	0.210	0.210	0.210	0.210

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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for educational attainment and party affiliation. 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	-0.0342***	-0.0355***	-0.0326***
	(0.0065)	(0.0066)	(0.0073)
Parent immigrated	-0.0254***	-0.0266***	-0.0240***
	(0.0050)	(0.0051)	(0.0056)
Grandparent immigrated	-0.0002	0.0007	0.0036
	(0.0043)	(0.0044)	(0.0044)
Demographic controls	✓	✓	✓
Wave fixed effects	✓	✓	✓
State fixed effects		✓	✓
Race fixed effects			✓
Observations	15,260	15,260	15,260
R^2	0.095	0.101	0.106
Dependent variable mean	0.500	0.500	0.500
Dependent variable std. dev.	0.202	0.202	0.202

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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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	0.0058	0.0103	0.0127						
	(0.0220)	(0.0225)	(0.0225)						
Parents' counties foreign share				-0.0277	-0.0252	-0.0309			
				(0.0204)	(0.0200)	(0.0228)			
Grandparents' counties foreign share							-0.0330***	-0.0327***	-0.0338***
							(0.0101)	(0.0101)	(0.0102)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
2nd generation immigrant		✓	✓		✓	✓		✓	✓
3rd generation immigrant			✓			✓			✓
Observations	14,294	14,231	13,331	12,933	12,932	12,219	10,276	10,273	10,273
R^2	0.089	0.090	0.092	0.099	0.100	0.102	0.099	0.099	0.099
Num. clusters	1,851	1,850	1,823	2,024	2,024	1,991	1,849	1,849	1,849
Dependent variable mean	0.498	0.498	0.496	0.498	0.498	0.497	0.498	0.498	0.498
Dependent variable std. dev.	0.198	0.198	0.199	0.200	0.200	0.200	0.201	0.201	0.201
Indep. variable mean	0.174	0.174	0.174	0.176	0.176	0.176	0.164	0.164	0.164
Indep. variable std. dev.	0.123	0.123	0.123	0.123	0.123	0.123	0.123	0.123	0.123

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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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)
African American/Black	0.0479***	0.0451***	0.0425***
	(0.0051)	(0.0053)	(0.0065)
American Indian or Alaska Native	0.0120	0.0108	0.0023
	(0.0167)	(0.0168)	(0.0202)
Asian/Asian American	-0.0136*	-0.0123	-0.0199*
	(0.0073)	(0.0076)	(0.0110)
Hispanic/Latino	0.0008	-0.0008	-0.0076
	(0.0053)	(0.0055)	(0.0071)
Native Hawaiian or Other Pacific Islander	0.0112	0.0162	-0.0250
	(0.0295)	(0.0300)	(0.0321)
Other race	-0.0066	-0.0060	-0.0055
	(0.0094)	(0.0095)	(0.0110)
Demographic controls	✓	✓	✓
Wave fixed effects	✓	✓	✓
State fixed effects		✓	✓
Birth town fixed effects			✓
Observations	16,363	16,363	15,224
R^2	0.098	0.103	0.291
Dependent variable mean	0.502	0.502	0.505
Dependent variable std. dev.	0.201	0.201	0.200

Notes: The table reports OLS estimates where the unit of observation is an individual. Demographic controls include age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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	0.0084	0.0092	0.0406***	0.0389***	0.1095***	0.1092***	0.0574***	0.0575***
	(0.0089)	(0.0089)	(0.0119)	(0.0121)	(0.0096)	(0.0096)	(0.0058)	(0.0058)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	–	–	✓	✓	–	–	✓	✓
State fixed effects		✓		✓		✓		✓
Observations	1,862	1,862	3,303	3,303	11,192	11,192	16,357	16,357
R^2	0.060	0.082	0.089	0.102	0.111	0.118	0.103	0.108
Dependent variable mean	0.568	0.568	0.507	0.507	0.490	0.490	0.502	0.502
Dependent variable std. dev.	0.187	0.187	0.198	0.198	0.202	0.202	0.201	0.201
Indep. variable mean	0.423	0.423	0.088	0.088	0.047	0.047	0.099	0.099
Indep. variable std. dev.	0.494	0.494	0.284	0.284	0.213	0.213	0.298	0.298

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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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	0.0507***	0.0561***	0.0438***	0.0441***								
	(0.0119)	(0.0140)	(0.0141)	(0.0141)								
Parents' counties enslaved share					0.0777***	0.0862***	0.0610***	0.0603***				
					(0.0113)	(0.0134)	(0.0142)	(0.0141)				
Grandparents' counties enslaved share									0.0751***	0.0842***	0.0537***	0.0501***
									(0.0104)	(0.0138)	(0.0149)	(0.0149)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓			✓	✓
Enslaved ancestor				✓				✓				✓
Observations	14,939	14,939	14,939	14,933	13,325	13,325	13,325	13,320	10,572	10,572	10,572	10,571
R^2	0.079	0.086	0.090	0.093	0.089	0.097	0.101	0.105	0.087	0.096	0.101	0.107
Num. clusters	1,955	1,955	1,955	1,955	2,086	2,086	2,086	2,086	1,906	1,906	1,906	1,906
Dependent variable mean	0.497	0.497	0.497	0.497	0.499	0.499	0.499	0.499	0.499	0.499	0.499	0.499
Dependent variable std. dev.	0.198	0.198	0.198	0.198	0.200	0.200	0.200	0.200	0.201	0.201	0.201	0.201
Indep. variable mean	0.064	0.064	0.064	0.064	0.065	0.065	0.065	0.065	0.074	0.074	0.074	0.074
Indep. variable std. dev.	0.146	0.146	0.146	0.146	0.144	0.144	0.144	0.144	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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	0.1515**	0.1522**	0.1732**						
	(0.0691)	(0.0688)	(0.0708)						
Parents' counties southern white share				0.2216***	0.2204***	0.2611***			
				(0.0619)	(0.0619)	(0.0654)			
Grandparents' counties southern white share							0.2390***	0.2383***	0.2394***
							(0.0678)	(0.0678)	(0.0681)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	10,831	10,782	10,128	10,136	10,136	9,591	7,847	7,845	7,845
R^2	0.095	0.096	0.099	0.102	0.103	0.105	0.109	0.109	0.109
Num. clusters	1,177	1,176	1,162	1,451	1,451	1,428	1,344	1,344	1,344
Dependent variable mean	0.492	0.491	0.490	0.490	0.490	0.488	0.490	0.490	0.490
Dependent variable std. dev.	0.198	0.198	0.198	0.200	0.200	0.200	0.201	0.201	0.201
Indep. variable mean	0.025	0.025	0.025	0.022	0.022	0.022	0.022	0.022	0.022
Indep. variable std. dev.	0.034	0.034	0.034	0.033	0.033	0.033	0.031	0.031	0.031

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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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)	0.0053***	0.0054***	0.0042**						
	(0.0014)	(0.0016)	(0.0017)						
Parents' counties CCI (0 to 4)				0.0086***	0.0081***	0.0062***			
				(0.0014)	(0.0016)	(0.0015)			
Grandparents' counties CCI (0 to 4)							0.0109***	0.0105***	0.0080***
							(0.0021)	(0.0025)	(0.0024)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	14,827	14,827	14,827	13,193	13,193	13,193	10,439	10,439	10,439
R^2	0.079	0.086	0.090	0.089	0.096	0.101	0.089	0.097	0.102
Num. clusters	1,925	1,925	1,925	2,055	2,055	2,055	1,868	1,868	1,868
Dependent variable mean	0.498	0.498	0.498	0.499	0.499	0.499	0.499	0.499	0.499
Dependent variable std. dev.	0.198	0.198	0.198	0.200	0.200	0.200	0.201	0.201	0.201
Indep. variable mean	2.216	2.216	2.216	2.136	2.136	2.136	2.083	2.083	2.083
Indep. variable std. dev.	1.234	1.234	1.234	1.153	1.153	1.153	1.148	1.148	1.148

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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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, 2023) – 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 4, showing the density of the zero-sum index by party. Figure E5 reproduces Figure 5, showing correlations between the zero-sum index and policy views controlling for demographics and other core beliefs.

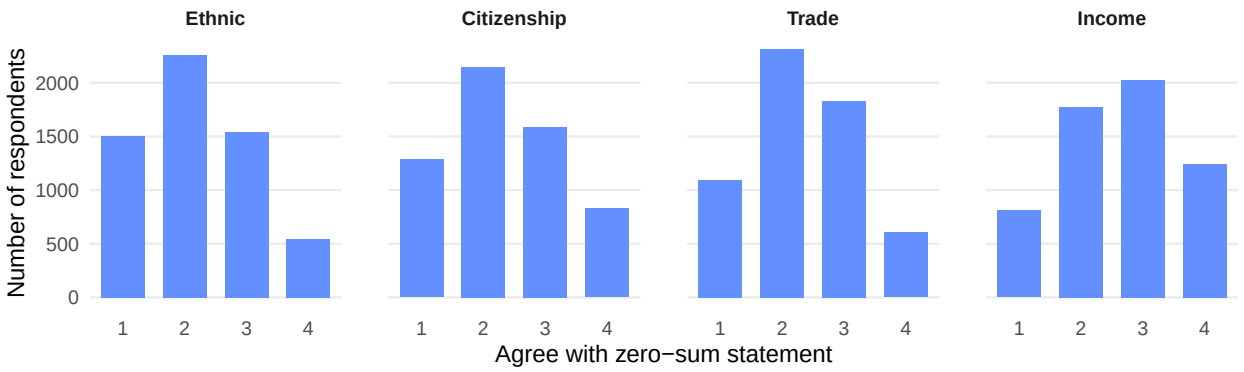


Figure E1: Distributions of Responses to Zero-Sum Questions

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.

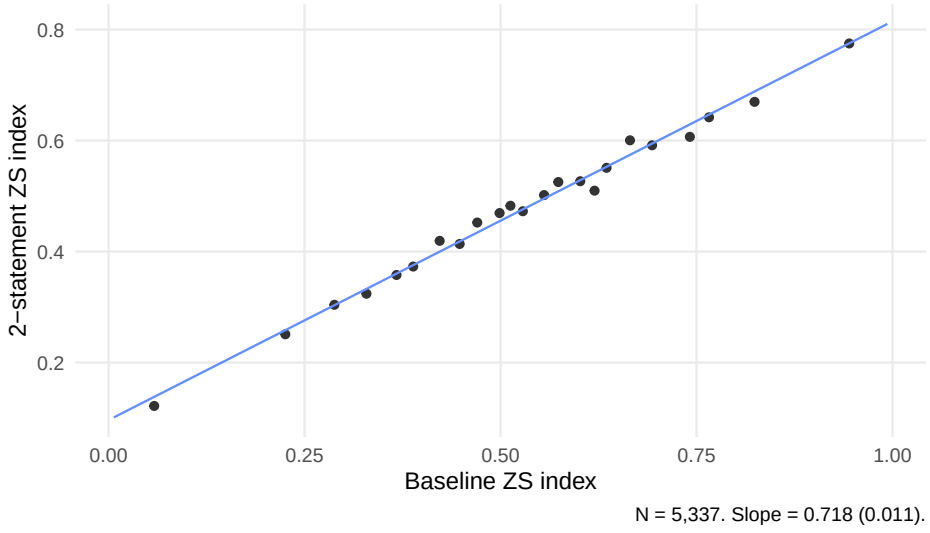


Figure E2: Relationship Between Baseline Zero-Sum Index and Two-Statement Zero-Sum Index

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.

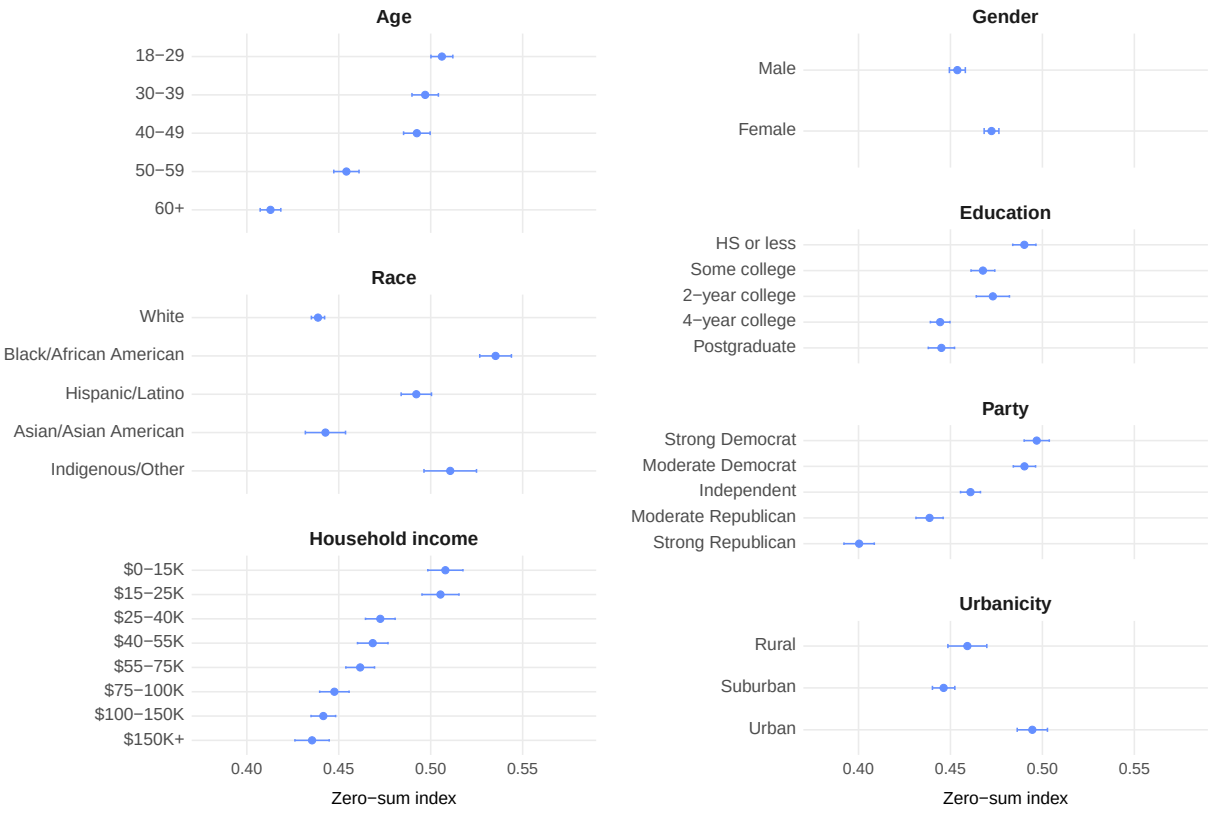


Figure E3: Average Zero-Sum Index by Demographic Group

Notes: Horizontal bars are 95% confidence intervals.

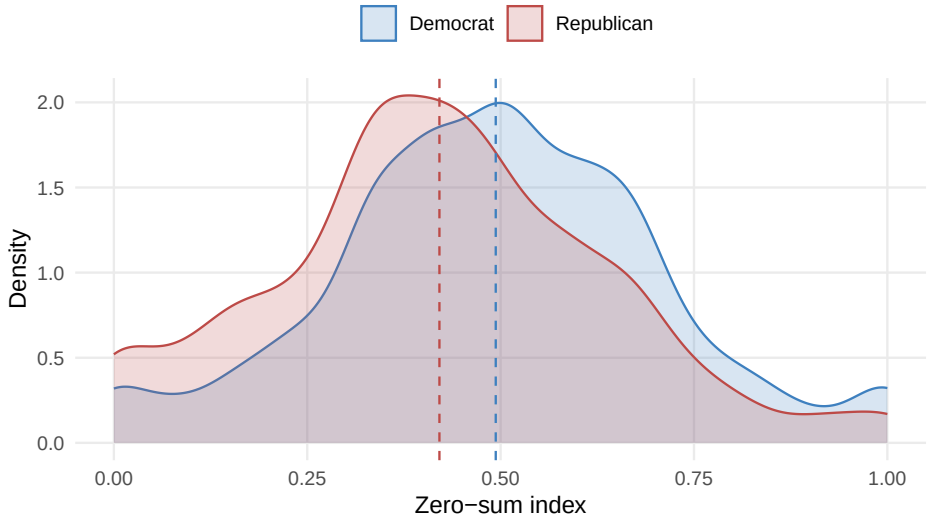


Figure E4: Density of Zero-Sum Index By Party

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.

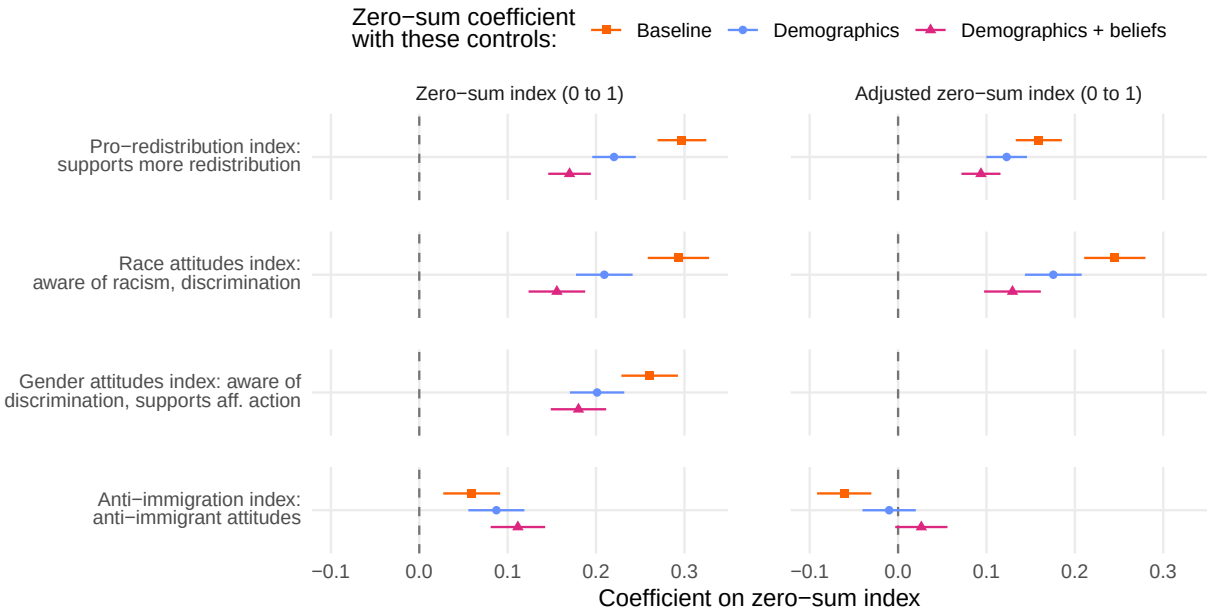


Figure E5: Zero-Sum Thinking and Policy Views

Notes: Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for survey wave. The three estimates in each column correspond to the baseline specification, as well as specifications that add (1) demographic controls: fixed effects for race, household income, educational attainment, party affiliation, and fixed effects for household income interacted with a quadratic in age, and (2) controls for other core beliefs: 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. Outcomes and regressors are normalized to be between zero and 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 (with the adjusted zero-sum index), the coefficient corresponds to the first principal component of three of the baseline questions, removing the one most similar to the policy outcome in that group – income for the redistribution outcomes, ethnic groups for the race outcomes, and citizenship for the immigration outcomes. Note that no component in the zero-sum index is closely related to gender equality. Indices of policy views are the first principal component of the relevant questions. See Section 3 for details. Horizontal bars are 95% confidence intervals.

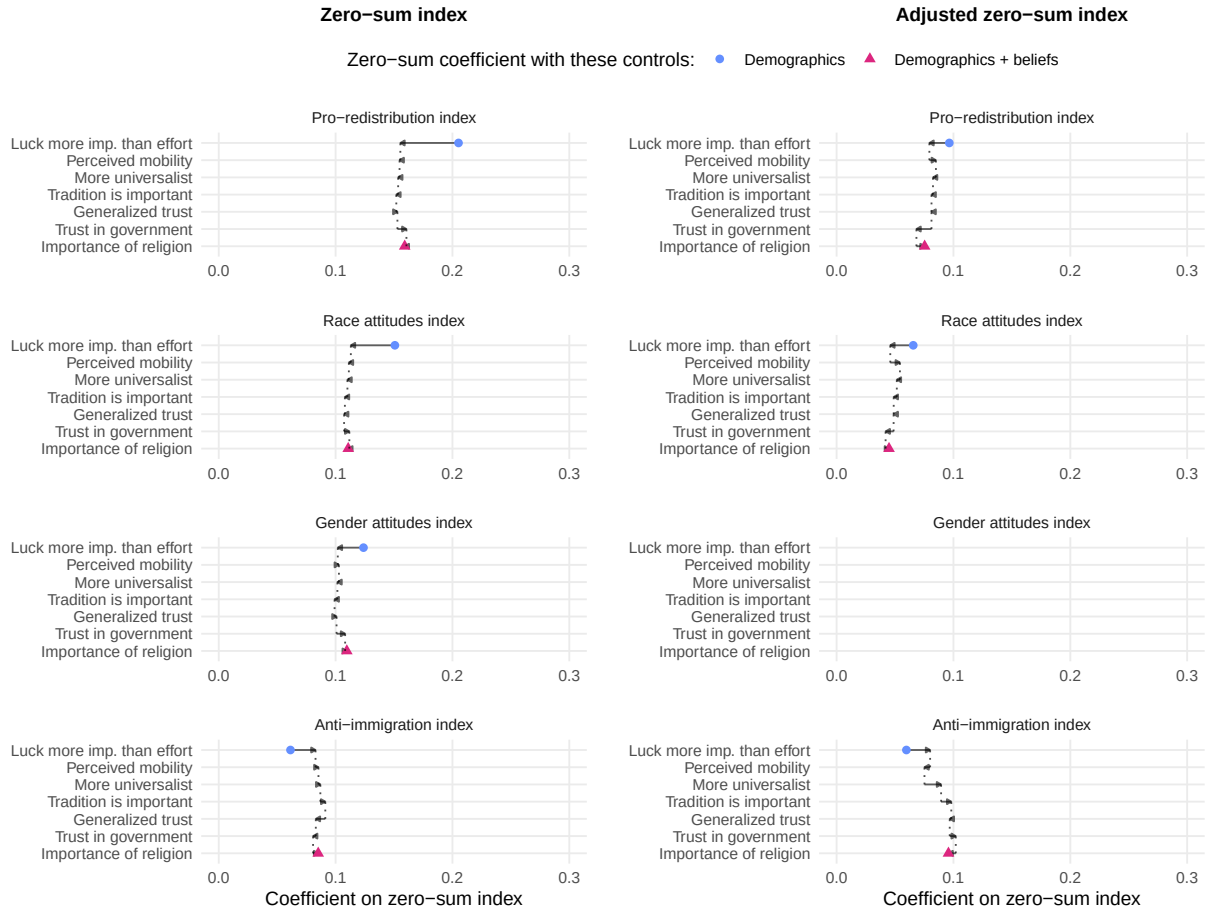


Figure E6: Gelbach Decompositions of Policy Views

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 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 5, include whether luck is more important than effort, perceived mobility, moral universalism, whether tradition is important, and generalized trust. Demographic controls include age and age squared, gender, and their interaction, whether the respondent was born in the United States, respondent race, household income, educational attainment, party affiliation, and fixed effects for household income interacted with a quadratic in age; we also include fixed effects for survey wave. 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 (with the adjusted zero-sum index), the coefficient corresponds to the first principal component of three of the baseline questions, removing the one most similar to the policy outcome in that group – income for the redistribution outcomes, ethnic groups for the race outcomes, and citizenship for the immigration outcomes. Note that no component in the zero-sum index is closely related to gender equality. Indices of policy views are the first principal component of the relevant questions. See Section 3 for details.

Appendix F. Real-Stakes Questions

In the final wave of our survey, we asked three questions with monetary incentives or "real stakes" (Stantcheva, 2023) 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.[F1] 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.

[F1] 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	0.1025***	0.0952***	0.1592***	0.1120***	0.1511***	0.0892***
	(0.0099)	(0.0100)	(0.0112)	(0.0096)	(0.0141)	(0.0120)
Demographic controls	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
Party fixed effects		✓		✓		✓
Observations	2,980	2,978	2,980	2,978	2,981	2,979
R^2	0.103	0.111	0.178	0.418	0.129	0.395
Dependent variable mean	0.490	0.490	0.657	0.657	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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	0.0378***	0.0266***	0.1471***	0.0823***	0.2053***	0.1231***
	(0.0071)	(0.0074)	(0.0074)	(0.0067)	(0.0094)	(0.0087)
Demographic controls	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
Party fixed effects		✓		✓		✓
Observations	2,976	2,974	2,976	2,974	2,976	2,974
R^2	0.079	0.087	0.220	0.418	0.222	0.424
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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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	0.1191***	0.1140***	0.3220***	0.2452***	0.2964***	0.1754***
	(0.0088)	(0.0097)	(0.0087)	(0.0089)	(0.0113)	(0.0114)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Party fixed effects		✓		✓		✓
Observations	2,985	2,983	2,985	2,983	2,986	2,984
R^2	0.124	0.125	0.433	0.544	0.263	0.433
Dependent variable mean	0.491	0.490	0.657	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, gender, and their interaction, whether the respondent was born in the United States, and fixed effects for household income, educational attainment, party affiliation, and household income interacted with a quadratic in age. 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. A Model of Redistribution with Zero-Sum Concerns

This model is adapted from Piketty et al. (2014). Imagine that each respondent j has their own specific model of the economy so that all parameters introduced below can have respondent-specific values, corresponding to a respondent's perceptions of them. To reduce notational clutter, we do not explicitly index each parameter by j. Let i index agents in the economy, as perceived by respondent j. Each person i exerts effort to produce output y_i and is paid $z_i = \eta_i \cdot y_i$. Pay can differ from marginal product and the gap between the two is $\pi_i := (\eta_i - 1)y_i$, which is the extent of zero- or positive-sumness in the economy (as perceived by respondent j). If $\eta_i > 1$, pay is above marginal product, and agent i is extracting resources from someone else in the economy (we might call these "rents," for instance through monopoly power in their business). In this case, agent i is part of a zero-sum interaction and is imposing a negative externality on others. On the contrary, if $\eta_i < 1$, pay is below marginal product, and agent i creates a positive spillover on others, e.g., if they are "job creators" whose economic activity benefits even those with lower incomes through increased employment and career opportunities. In this case, agent i contributes to a positive-sum interaction.

Agents face increasing and convex costs of producing output and increasing their pay relative to their output, $h_i(y)$ and $k_i(\eta)$. Their utility payoff is:

$$u_i(c,\eta,y) = c - h_i(y) - k_i(\eta) \tag{A1}$$

To capture preferences for redistribution, focus on the top tax rate. Top earners, of mass one, are those who make income above $\bar{z}$. The government can set a linear tax rate τ in the top tax bracket. Let $z(1-\tau) := \int_{i:z_i \geq \bar{z}} z_i di$ be the average income of top bracket taxpayers and $\pi(1-\tau) := \int_{i:z_i \geq \bar{z}} \pi_i di$ their average rent, which are both functions of the top net-of-tax rate. Let $e = \frac{d\log(z)}{d\log(1-\tau)}$ be the elasticity of earnings to the net-of-tax rate and $e_\pi = \frac{d\log(\pi)}{d\log(1-\tau)}$ the elasticity of the rent. Define $a = z/(z-\bar{z})$ to be the Pareto parameter of the top tail of the distribution. The average zero-sumness (or rent) in the economy must come at the expense or benefit of some agents. For simplicity, we assume that all agents bear it uniformly. This assumption can be relaxed and we discuss this below. Thus, the government can fully tax or rebate back the average rent or surplus to everyone with a lump-sum tax or transfer (the demogrant).

A general way to capture the heterogeneous objectives of respondents relies on generalized marginal social welfare weights (Saez and Stantcheva, 2016). The weight g_i on person i measures the social value (according to respondent j) of transferring \$1 to person i. These weights can be used to aggregate the gains and losses from tax changes of different people in the economy. They embody the social preferences of individuals when it comes to taxes and transfers and can depend on their social fairness concerns and many other factors. For instance, we can write:

$$g_i = g(c_i, T_i, ZS_i, \mathbb{X}_i) \tag{A2}$$

where the weight on agent i is a function of their consumption c_i, their total tax paid T_i, and other personal characteristics captured by vector $\mathbb{X}_i$ (e.g., age or family status). Importantly, it can be a function of the perceived contribution of agent i to a zero-sum or not zero-sum interaction, captured by ZS_i.

To go from these individual weights to social marginal welfare weights for a given income level, respondents need to average the weights across all individuals earning that income level. The income-weighted average marginal social welfare weight on top earners relative to the average weight in the economy is $\bar{g}^{top} = \frac{\int_{i:z_i \geq z} z_i g_i}{z \int_i g_i}$.

According to respondent j, the optimal top income tax rate that the government should set is given by:

$$\tau^{top} = \frac{1 - \bar{g}^{top} + a \cdot \pi / z \cdot e_\pi}{1 - \bar{g}^{top} + a \cdot e} \tag{A3}$$

where all parameters are as perceived by the respondent, and may or may not correspond to reality.

One standard case is when social marginal welfare weights capture an aversion to inequality (e.g., decrease in disposable income c) and faster declining weights lead to higher preferred tax rates. This inequality concern might lead people to want to help disadvantaged groups, regardless of whether there are zero-sum interactions or not. But it will also interact with zero-sum concerns as we outline below. We now discuss how zero-sum mindsets affect the preferred top tax rate.

1. Externality correction: The preferred tax depends on perceived spillover effects from top tax rates, either through zero-sum (often called "trickle-up" when it comes to income) or positive-sum ("trickle-down") effects embodied in $\pi / z \cdot e_\pi$. Respondents who perceive that there is more zero-sumness will want a higher tax rate to correct for this negative externality.

If the externality does not affect others uniformly but instead comes only at the expense of non-top taxpayers (in this case, the "disadvantaged group"), then this would increase the preferred top tax rate, all else equal (for any redistributive weights, since lower-income people will generically get a higher weight). Our survey question corresponds most closely to a setting in which the externality is imposed exclusively on lower-income people by higher-income people.

2. ***Procedural fairness concerns:*** Social preferences are embodied in $\bar{g}$. If people dislike those who impose zero-sum interactions, the weight g_i on agent i will be decreasing in ZS_i, i.e., when that agent is perceived to be part of a group that is imposing zero-sum externalities on others. People may dislike those who impose zero-sum externalities for fairness reasons. One major such criterion is "procedural fairness," whereby people care not only about the outcome (in this case, someone's income) but also about how the outcome was achieved. This criterion commonly appears in other well-studied settings, such as concerns about equality of opportunity and a level playing field (see, e.g., Alesina et al. (2018)). In our case, when income is achieved through a zero-sum interaction (taking from others), this might be considered unfair by respondents. The strength of this concern might depend on whether the group imposing the zero-sum interaction is the disadvantaged or advantaged one (i.e., ZS_i might interact with c_i in the function $g()$). In other words, people may consider it less unfair if a disadvantaged group is engaging in a zero-sum interaction at the expense of an advantaged group.

3. ***Self-interest:*** If agents are entirely self-interested, then the respondent assigns a positive social marginal welfare weight only to themselves, with everyone else receiving a weight of zero. This would lead respondents to prefer the tax rate that most benefits people with their income level. Therefore, it matters whether a respondent is part of the group losing from the zero-sum interaction or the group benefiting from it. Given how our questions are phrased, a respondent who is more zero-sum according to our measure believes that the top-income people gain at the expense of lower-income ones. Hence, the effect of this channel depends whether the respondent is part of the top income group or not.

Suppose a respondent is part of the top income group. If the externality is exclusively imposed by high-income on low-income agents (as most closely aligns with our survey question), they should demand no redistribution at all (zero top tax rates), even if they believe the world is zero-sum. On the other hand, as long as they put *some* weight on others and/or care about procedural fairness, they will also demand some redistribution above and beyond their narrow

self-interest. In principle, then, the correlation between zero-sum thinking and our core policy views is an empirical question for respondents who are part of a group that benefits from the zero-sum interaction. In fact, our results suggest that high-income respondents support more redistribution when they are zero-sum minded, suggesting that there is a procedural fairness concern and/or an externality correction one. If, on the contrary, a respondent is not part of the top income group, then all effects point in the same direction, and they will support more redistribution if they believe the world is more zero-sum.

Similar reasoning applies to two other policy outcomes that we study: favoring policies to promote gender equality and racial equality. For immigration, the link between a zero-sum mindset and policy depends on which group is considered disadvantaged. Respondents who say that the gains of immigrants come at the expense of non-immigrants might believe that immigrants are the disadvantaged group if they come from, on average, poorer countries, which would dampen their wish to correct for this externality or their procedural fairness concern. The self-interest motive would push people to be more anti-immigration.

Appendix H. 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. For any question about your rights as a research participant you may contact 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

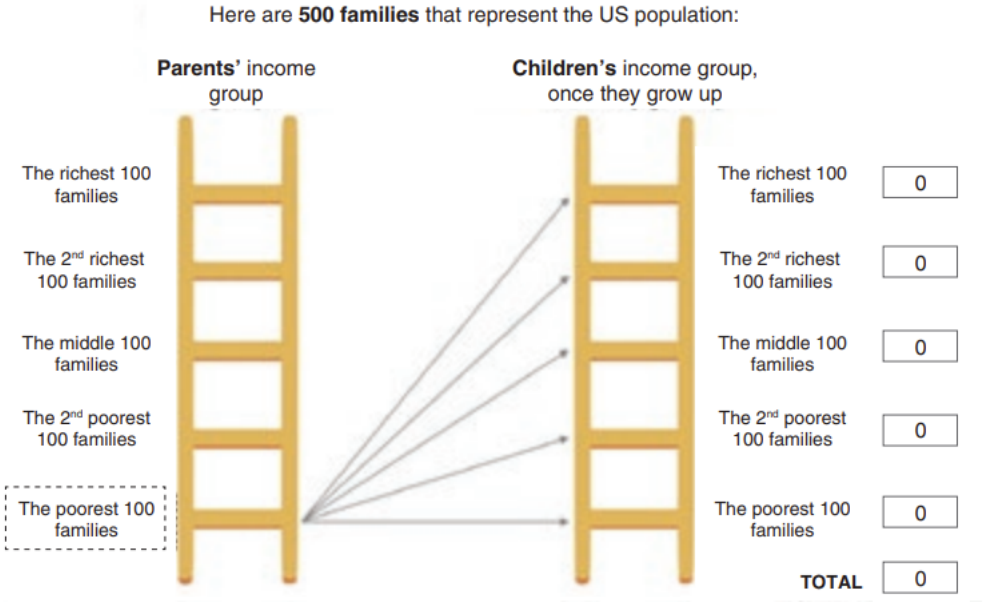
104. **We would now like to ask you what you think about the life opportunities of children from very poor families.**

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

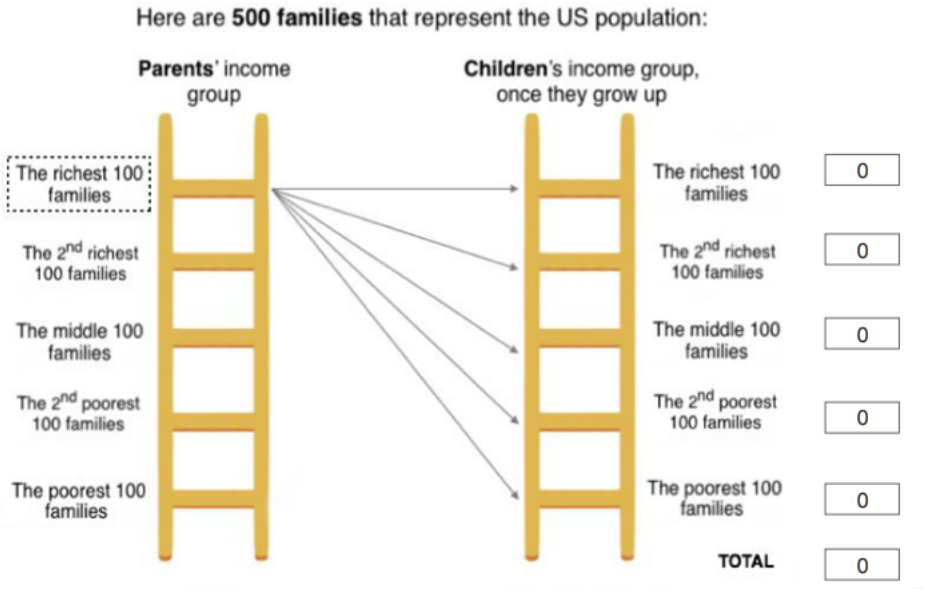
106. [W1-W4] Do you think that a child from the **poorest** 100 families will grow up to be among the **second richest 100 families** are:
Close to zero; Low; Fairly low; Fairly high; High

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 of 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 well 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; 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; 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	◯	◯	◯	◯	◯
[W1-W4] Improving the conditions of the poorest neighborhoods	◯	◯	◯	◯	◯
[W1-W4] Helping low income households pay for their health insurance and health care	◯	◯	◯	◯	◯
Spending more on defense and national security	◯	◯	◯	◯	◯
Spending more on infrastructure	◯	◯	◯	◯	◯

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	◯	◯	◯	◯
Higher unemployment	◯	◯	◯	◯
Making it harder to keep the country united	◯	◯	◯	◯
Higher crime rates	◯	◯	◯	◯
Making the country more open to new ideas and cultures	◯	◯	◯	◯
People born in the US losing their jobs	◯	◯	◯	◯

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 sa 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	◯	◯	◯	◯
[W1-W4] To have American citizenship	◯	◯	◯	◯
[W1-W4] To have lived in America for most of one's life	◯	◯	◯	◯
[W1-W4] To be able to speak English	◯	◯	◯	◯
To be a Christian	◯	◯	◯	◯

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	◯	◯	◯	◯	◯
There are some things about America today that make me feel ashamed of America	◯	◯	◯	◯	◯
[W1-W4] People should support their country even if the country is in the wrong	◯	◯	◯	◯	◯

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	◯	◯	◯	◯	◯
Freedom is having the right to participate in politics and elections	◯	◯	◯	◯	◯
Freedom is having the power to choose what I want in life	◯	◯	◯	◯	◯
Freedom is being able to express unpopular ideas without fearing for my safety	◯	◯	◯	◯	◯

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	◯	◯	◯	◯
Experienced feeling down, depressed or hopeless	◯	◯	◯	◯

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

0; 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]