

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

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## ABSTRACT:

We examine the causes and consequences of an important cultural and psychological trait: the extent to which one views the world in zero-sum terms – i.e., that benefits to one person or group tend to come at the cost of others. We implement a survey among approximately 15,000 individuals living in the United States that measures zero-sum thinking, political preferences, policy views, and a rich set of characteristics about their ancestry. We find that a more zero-sum mindset is strongly associated with more support for government redistribution, less support for immigration, and more support for race- and gender-based affirmative action. We find that zero-sum thinking can be explained by the experiences of an individual’s ancestors (parents and grandparents), including the amount 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. The findings underscore the importance of psychological traits, and how they are transmitted intergenerationally, in explaining current political divides in the United States.

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

JEL Classification: N10; Q54.

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## 1. Introduction

We examine the implications of a hypothesis that was first proposed by Foster (1965, 1967) to better understand the current social, political, and cultural landscape of the United States. Foster hypothesized that many societies have a “zero-sum” view of the world, or what he called an “image of limited good.” This mental model of the world suggests that if one person does better, it must be at the expense of somebody else. The implicit assumption underlying this mindset is that the amount of output in society is limited, and effort, instead of creating value, merely redistributes it.

Although Foster himself proposed this hypothesis to understand economic beliefs and social relations in the context of rural Mexico (e.g., Foster, 1962, 1967, 1972), he gave many examples from other parts of the world. In fact, the view of the world as zero-sum has also emerged time and time again in the historical record, from European Mercantilism in the Early Modern period to beliefs about trade and immigration policies today (Thurow, 1980, Rubin, 2003).

It is easy to see how this view arises in a world where all important resources and assets are in limited supply so that, quite literally, the world is zero-sum. In smaller-scale pre-industrial societies, land is limited, so more land for one group means less land for another. The same is true for livestock, authority, and social status. If markets are not developed and there is no technological progress, then the most common way for a group to get ahead is at the expense of others. Similarly, living in environments that are more zero-sum, such as periods of economic stagnation, likely promote a zero-sum view of the world. By contrast, periods of economic growth, when there is an abundance of resources, are expected to promote a more positive-sum mental framework. Thus, we expect a zero-sum cognitive framework to prevail in many parts of the world, at different moments in time, generating rich variation across time and space. Moreover, because of the persistence and stickiness of cultural and psychological traits, this view may continue to dominate even in settings that are not actually (or no longer) zero-sum, leading to cultural mismatch (Nunn, 2021).

In this paper, we study the implications of zero-sum thinking for political preferences and views on policy. Along these lines, our analysis makes three contributions. First, we measure the prevalence of zero-sum thinking in the United States. We do this by administering online surveys, which are approximately 30 minutes long, to a representative sample of approximately

15,000 individuals. One component of the survey asks people their political and policy views on a range of topics. Another module asks detailed questions about their own history, as well as the history of their parents and grandparents. The final component attempts to measure the extent to which individuals view the world as zero-sum.

We create a measure of zero-sum thinking by asking individuals whether benefits for some tend to come at the expense of others. To distill a measure of the extent to which individuals view the world in zero-sum terms, we ask about multiple scenarios that consider different benefits and different domains and groups. We ask about: (1) wealth gains of different ethnic groups in the U.S.; (2) the economic well-being of U.S. citizens and non-citizens; (3) accumulation of money of different countries during international trade; and (4) wealth accumulation of different income classes in the U.S..

Using principal component analyses, we first examine the data to see if there is an underlying factor that reflects zero-sum thinking and explains an important part of participants' responses to the questions. We find this to be the case. The data indicate the presence of a general zero-sum worldview – captured by the first principal component– which has the greatest explanatory power and affects respondents' perceptions of the relationships between individuals or groups in the different scenarios. We use the estimated factor loadings from the principal component analysis, which are positive and of similar magnitude for each of the four domains, to create an index that ranges from 0 to 1 that captures the extent to which respondents view the world in zero-sum terms.

Our second contribution is to highlight the implications of a zero-sum mindset for attitudes and views in the United States. We find that individuals who view the world in more zero-sum terms tend to support policies that redistribute income from the rich to the poor or redistribute access to resources towards disadvantaged groups. This includes redistributive policies like taxation, universal healthcare, and affirmative action for women and African Americans. They also tend to be significantly more opposed to liberal immigration policies. While zero-sum thinking is associated with stronger political alignment with the Democratic Party on average (and weaker alignment with the Republican Party), it mainly helps explain significant variation *within* parties on these specific views.

One concern is that zero-sum thinking may be associated with other values or beliefs that are also important for political preferences. To test whether our findings are being driven by omitted

factors, we measure the most relevant and commonly studied factors in the literature: belief in the role of luck versus hard work for success, moral universalism, trust, perceptions of mobility, and the importance of tradition. We examine the sensitivity of our findings to conditioning on these other factors and find that the patterns we document remain robust. Thus, a zero-sum mindset does capture a distinct and important dimension shaping policy views.

We then turn to the question of whether these patterns generalize beyond the United States. Using a single question that is asked in the World Values Survey (that we validate using a subsample from our analysis), we examine the same relationships among the 72 countries for which data are available. Consistent with the findings from the United States, we find that zero-sum thinking is associated with stronger support for left-wing political parties, for government redistribution and for restrictions on immigration. Thus, the relationships between zero-sum thinking and political preferences and policy views found in the United States appear to be quite general.

We also consider the extent to which zero-sum thinking can help us understand some (perhaps puzzling) policy and political preferences in the United States. We discuss how zero-sum thinking helps rationalize why certain groups who stand to gain economically from government redistribution – white rural populations – tend to oppose government redistribution and those who stand to lose – urban educated elites – tend to support government redistribution. Our analysis shows that the former tend not to view the world as zero-sum, while the latter do.

We show that zero-sum thinking also helps explain why a large number of Democratic voters – including those who had supported Barack Obama and/or Bernie Sanders – voted for Donald Trump. Trump’s “us versus them” rhetoric, including his stance on immigration, appears to have appealed to Democrats who view the world as being zero-sum.

These patterns are consistent with additional findings that highlight the importance of within-party divisions. For example, it is well-recognized that there are important coalitions within both parties, even the Democratic Party, that tend to support stronger restrictions on immigration. Similarly, there is wide variation in the extent to which individuals in the Republican Party oppose government redistribution, and a significant share of Republicans support it. We show that both patterns can be explained by zero-sum thinking. Although the Democratic Party tends to support more open immigration policies, the most zero-sum within the party prefer stronger restrictions on immigration because this mindset implies that gains to immigrants likely come at the expense of non-immigrants. Similarly, we find that Republicans who are more zero-sum are

less likely to oppose government redistribution.

Lastly, we show that zero-sum thinking can also explain the surprising and recently-documented fact that belief in conspiracy theories, as well as sympathy for the January 6 Capitol rioters, tend to be nearly as common among Democrats as Republicans. We find that individuals who view the world in zero-sum terms are more likely to believe that the conspiracy theory QAnon holds some truth for U.S. politics. This is explained by the fact that QAnon's narratives are zero-sum in nature and center around a small group of wealthy individuals enriching themselves at the expense of less wealthy individuals across the world. We also find that zero-sum thinking is linked with empathy and understanding for those involved in the January 6, 2021 attack on the U.S. Capitol Building, an act that is more justifiable and seen as less harmful if one presumes the world is zero-sum (rather than negative sum). We find that correlations are found within both the Democratic and Republican parties.

Our third contribution is to document the origins of variation in zero-sum thinking within the United States. Consistent with the notion that zero-sum thinking can be shaped by historical forces, we find that the experiences of an individual's ancestors affects their zero-sum thinking today. To do so, we collect detailed data about a respondent's own history and that of their ancestors, including parents and maternal and paternal grandparents: in which country and city they were raised, where and when they lived, their occupation, education, and their income relative to others at that time. We examine factors that are particularly salient given the history of the United States, namely ancestral economic mobility, immigration, and enslavement. We consider their direct impacts (whether the individual's ancestors were immigrants) and their indirect ones (whether the ancestors live in areas with many immigrants).

On the first factor, economic mobility, we find consistent evidence that greater upward mobility is associated with less zero-sum thinking and that the effects are fairly similar for mobility experienced by all generations.

On immigration, we first examine the direct effects of having (recent) immigrant ancestors. A history of immigration in the family is robustly associated with less zero-sum thinking. The effects tend to be greater for more recent episodes of immigration – the relationship is strongest for individuals who are immigrants themselves, then for the children of immigrant parents, and then for the grandchildren of immigrant grandparents. The findings are consistent with the immigrant experience leaving the newcomer and their descendants economically better-off, which

is not perceived as coming at the expense of others. The widely held belief that the economic success of the United States is due to its history of immigration suggests that immigration, rather than being zero-sum, has been a win-win situation for immigrants and U.S.-born individuals.

We also test whether, conditional on one's own immigration experience, living in a county with a large number of immigrants has similar effects. A potential mechanism is through the growth-promoting effects of immigrants, which have been well-documented. We link our survey information on the place where parents and grandparents grew up, to county-level information on the average share of the population that were immigrants during the Age of Mass Migration, between 1860 and 1920. We find that if parents or grandparents were raised in a county with more immigrants, the respondent (their child or grandchild, respectively) has a less zero-sum worldview today. This is consistent with the views of parents and grandparents being influenced by the number of recently arrived immigrants in their location and these views being passed on to younger generations, including the respondent. Interestingly, we do not find a relationship between the 1860-1920 immigrant share of the county that the respondent themselves grew up in, suggesting that the importance of the place-based effects arising from the wave of immigrants in the late 19th and early 20th centuries may no longer be present today.

The third factor that we consider, ancestral enslavement, is different from the first two. Since it is a historical episode that is very zero-sum in nature, unlike mobility and immigration, we expect that it will be associated with more zero-sum thinking. The most salient episode of enslavement in U.S. history is antebellum chattel slavery in the U.S. South, and we find that, consistent with this, respondents who identify as Black are significantly more zero-sum than any other ethnic group in our sample. (The least zero-sum are Asian and Asian-American respondents.)

While telling, this is not definitive evidence for the importance of enslavement. In addition, there are many other instances of enslavement that may affect respondents in our sample, such as the internment of Japanese and German Americans, the forced reservation of Indigenous populations, indentured servitude, and the imprisonment of Jewish populations in concentration camps during the Holocaust. To make progress on this question, we ask respondents whether any of their recent ancestors were enslaved and find that a history of ancestral enslavement does indeed have the opposite effect of mobility and immigration: if an individual's ancestors were enslaved, then they have a more zero-sum view today. This is true on average for our full sample, but it is particularly strong for individuals who are not Black. This is consistent with other

forms of widespread oppression – such as Jim Crow, segregation, interpersonal racial bias, and racism in formal institutions – also being important beyond the direct experience of slavery, thus dampening the marginal effect of having ancestors who were enslaved for Black individuals.

We then turn to the question of whether being raised in a county that formerly had a greater prevalence of enslavement (measured in 1860) is associated with more zero-sum thinking. We find that growing up in a county with more 1860 enslavement is significantly associated with more zero-sum thinking. This is true for the county of the respondent, the parents, and the grandparents. Thus, in contrast to the effects for historical immigration, for historical enslavement, the place-based effects appear to still be present today. Interestingly, we find that the marginal effect of being raised in a county with high enslavement is strongest for individuals who are white and weakest for those who are Black. This is consistent with the existence of other widespread forms of oppression for Black but not for white respondents.

We also show evidence for the spillovers of slavery from Southern to non-Southern counties using the migration of Black and white Southerners to non-Southern counties. Leveraging data and the instrumental variable strategy in 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 or Black Southern migrants have a stronger zero-sum mindset. The same goes for places with a stronger ‘Confederate’ culture.

Finally, we check the generality of our findings about the origins of zero-sum thinking using data from the World Values Survey (WVS). While the history of enslavement and immigration may be particular to the United States, we expect the effects arising from upward mobility to be more pervasive. Although we do not have mobility data for a broad cross-section of countries, we can measure income growth. Thus, we check whether the economic growth experienced in the first 20 years of an individual’s life affects their zero-sum thinking. We first confirm that we observe such a relationship in the U.S. data. We then look at a sample of individuals from 72 countries. 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. This suggests that the patterns uncovered regarding the economic determinants of zero-sum thinking are potentially quite general.

Our work builds on a recent literature in social psychology that seeks to conceptualize, quantify, and better understand the origins and implications of zero-sum thinking. Różycka-Tran

et al. (2015) introduce an axiom called “Belief in a Zero-Sum Game (BZSG).” The authors develop a zero-sum belief scale that they implement on 6,138 university students from 37 countries. They find that at the country level, zero-sum thinking is negatively associated with individualism and positively associated with collectivism, and is negatively associated with measures of economic development (see also Rózycka-Tran et al., 2019, Piotrowski et al., 2019). Meegan (2010) studies zero-sum “bias” which occurs when an individual perceives a zero-sum situation even if resources are unlimited. Johnson et al. (2022) show that “win-win denial,” the refusal to see situations as mutually beneficial, underpins zero-sum thinking.

The social psychology literature has explored how zero-sum thinking shapes racial and gender relations, highlighting the different implications depending on whether a person is part of an “advantaged or high-status” group or a “disadvantaged” one. Norton and Sommers (2011) document that white respondents seem to consider racism a zero-sum game in which decreases in perceived bias against Black people translate into higher “reverse racism” against white people. Wilkins et al. (2015) 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. Stefaniak et al. (2020) also show that zero-sum beliefs are more common among white respondents (the advantaged group) than among Black respondents (the disadvantaged group) and are positively correlated with supporting the status quo, i.e., negatively correlated with their willingness to become “allies” of disadvantaged groups. We shed new light on these issues by considering not only zero-sum thinking in the context of race or gender, but rather a general measure of a zero-sum mindset as well as its historical and ancestral origins in enslavement in the U.S.

On gender, Sicard and Martinot (2018) show that when sending status-threatening messages to children in school (i.e., emphasizing either boys’ or girls’ academic achievements), boys (but not girls) endorse greater zero-sum thinking in school as a competition between boys and girls. Kuchynka et al. (2018) confirm these findings for the workplace and in college.

Our work is related to recent or contemporaneous studies in political science on the link between zero-sum thinking and political ideology. Davidai and Ongis (2019) study how political ideology interacts with zero-sum thinking. Depending on the context of the question being asked – e.g., economic, racial, immigration-related, etc. – liberal individuals may exhibit more or less zero-sum thinking than conservative ones. This is why our first contribution is to measure a



zero-sum mindset overall, rather than views about a particular situation or context. Andrews Fearon et al. (2021) investigate how zero-sum thinking can increase hostility and distrust and weaken belief in democratic institutions in U.S. and U.K. samples.

We also show a link between zero-sum thinking and conspiracy theories across the partisan divide, which adds to existing empirical work in political science attempting to better understand the correlates and determinants of conspiracy thinking (Papaioannou et al., 2022) and belief in QAnon (Enders et al., 2022).

Within economics, research on zero-sum thinking has been more limited. On the theoretical side, Gershman (2014) models the relationship between a zero-sum world, the potential emergence of envy, and longer-run economic development. Carvalho et al. (2022) develop an evolutionary model that shows how a more zero-sum environment can result in “demotivating beliefs” that reduce effort. While neither paper considers the application of these mechanisms to the U.S. political context, they do provide the conceptual foundations for our analysis of the historical roots of zero-sum thinking today. The prior studies illustrate how the environment of the past can shape zero-sum thinking today.

On the empirical side, Gershman (forthcoming) documents a positive cross-country relationship between zero-sum perceptions and beliefs in witchcraft. Carvalho et al. (2022) examine individual-level data from the Democratic Republic of the Congo and find the same positive relationship between zero-sum thinking and beliefs in witchcraft or feelings of jealousy. Using cross-national data from the World Value Survey, they also show that zero-sum thinking is associated with weaker beliefs about the value and importance of hard work and economic prosperity. Our findings show that zero-sum thinking is not confined to developing societies or economic and social relationships, which were the focus of Foster’s (1965, 1967) original study. We find that zero-sum thinking is important for understanding contemporary political issues too. Furthermore, we provide empirical evidence of the origins of zero-sum thinking, showing that individual-level experiences, which can vary significantly across time and space, have important implications for the extent of zero-sum thinking for current and future generations.

Our focus on the historical determinants of zero-sum thinking contributes to our understanding of the origins of psychological traits. By pushing our understanding of the historical roots of zero-sum thinking, our research supports the recent call for psychology to better identify with the historical origins of both psychological traits and mental views of how the world works

(Muthukrishna et al., 2021). Although not the focus of past research, evidence on the historical determinants of zero-sum thinking can be gleaned from some previous findings. For example, (Jha, 2013) documents how South Asian cities, that were historically engaged in long-distance trade that required the cooperation of Hindu and Muslim merchants, tend to have higher levels of trust and lower levels of religious conflict today. Thus, a history of mutually beneficial economic activities, that were primarily non-zero sum in nature, appears to have reduced between group hostilities with a reduction in zero-sum thinking being a plausible mechanism.

Our paper also contributes to the literature studying the effects of ancestry on attitudes and views. Related to our results on enslavement, Nunn and Wantchekon (2011) show that individuals whose ancestors were more severely affected by the trade of enslaved people have lower levels of trust toward their neighbors, relatives, and local governments today. Chen and Yang (2015) find persistent effects across generations of the Great Chinese Famine, which reduced trust in local governments among those whose ancestors were affected or who were themselves affected. Fernández et al. (2004) document that men whose mothers worked are more likely to have wives who work, suggesting intergenerational propagation of gender norms.

Finally, our work adds to the literature on the effects of one's own experience on beliefs and policy views. Luttmer and Singhal (2011) show that the cultural background of immigrants is strongly related to their preferences for redistribution and this effect persists into the second generation. Alesina and Fuchs-Schündeln (2007) establish that preferences for redistribution are affected by economic regimes by exploiting changes in the economic system during German separation and reunification: East Germans, especially older ones, favor redistribution more. Malmendier and Nagel (2011) find that those who experienced periods of low stock market returns are more risk averse, pessimistic, and less likely to participate in the stock market. Similarly, Malmendier and Nagel (2016) document that individuals have higher inflation expectations if they have experienced more inflation during their lifetimes. Roth and Wohlfart (2018) show that individuals who experience higher inequality over their lifetimes support less redistribution.

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

#### a. Recruiting respondents

Our sample comprises approximately 14,500 respondents collected during five waves of surveying between October 2020 and May 2022. 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 to participate. Respondents were incentivized using a variety of rewards, ranging from cash to extra miles on frequent flyer accounts or points on frequent shopper cards. For more information on how survey companies recruit respondents and how their pools of respondents compare to the population, see Stantcheva (2022).

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

#### b. Sample

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

Appendix Table A1 shows that around 24% of respondents who start the survey do not complete it, and about one-third of respondents who drop out do so during the background information questions (36%). There are some significant predictors of attrition but their effects are generally very small. Older respondents, women, African American respondents, and lower-income respondents are less likely to complete the survey but the differences are not substantively meaningful. 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 C provides the entire survey questionnaire. Our survey includes the following modules:

Table 1: Sample Characteristics

	U.S. Population	Survey Sample
Male	0.49	0.48
18–29 years old	0.20	0.20
30–39 years old	0.18	0.18
40–49 years old	0.16	0.18
50–59 years old	0.16	0.19
60+ years old	0.30	0.24
\$0–\$14,999	0.09	0.09
\$15,000–\$24,999	0.07	0.08
\$25,000–\$39,999	0.11	0.13
\$40,000–\$54,999	0.11	0.11
\$55,000–\$74,999	0.12	0.13
\$75,000–\$99,999	0.12	0.12
\$100,000–\$149,999	0.16	0.21
\$150,000+	0.22	0.12
Four-year college degree or more	0.35	0.49
High-school graduate or less	0.39	0.20
Employed	0.61	0.56
Unemployed	0.02	0.09
Self-employed	0.07	0.07
Married	0.52	0.51
White	0.62	0.70
Black/African American	0.12	0.11
Hispanic/Latino	0.17	0.09
Asian/Asian American	0.06	0.07
Democrat	0.31	0.41
Republican	0.29	0.31
Independent	0.39	0.28
Voted for Clinton in the 2016 presidential election	0.48	0.40
Voted for Trump in the 2016 presidential election	0.46	0.36
Voted for Biden in the 2020 presidential election	0.51	0.54
Voted for Trump in the 2020 presidential election	0.47	0.31
Sample size		14,493

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

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

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

Although we explicitly only collect information up to a respondent's grandparents, some of the information collected tells us about the respondent's great-grandparents. For example, if we know where a grandparent grew up, this also gives us some information about 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 provides some information about the economic conditions of the respondent's great-grandparents early in their adult life. Thus, effectively, we are able to collect socioeconomic information over four generations.

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

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

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

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

Our baseline measure of zero-sum thinking is based on four questions related to how zero-sum different relationships in different domains are. Each question asks respondents to consider a statement and report the extent to which they agree with it (using one of the following five

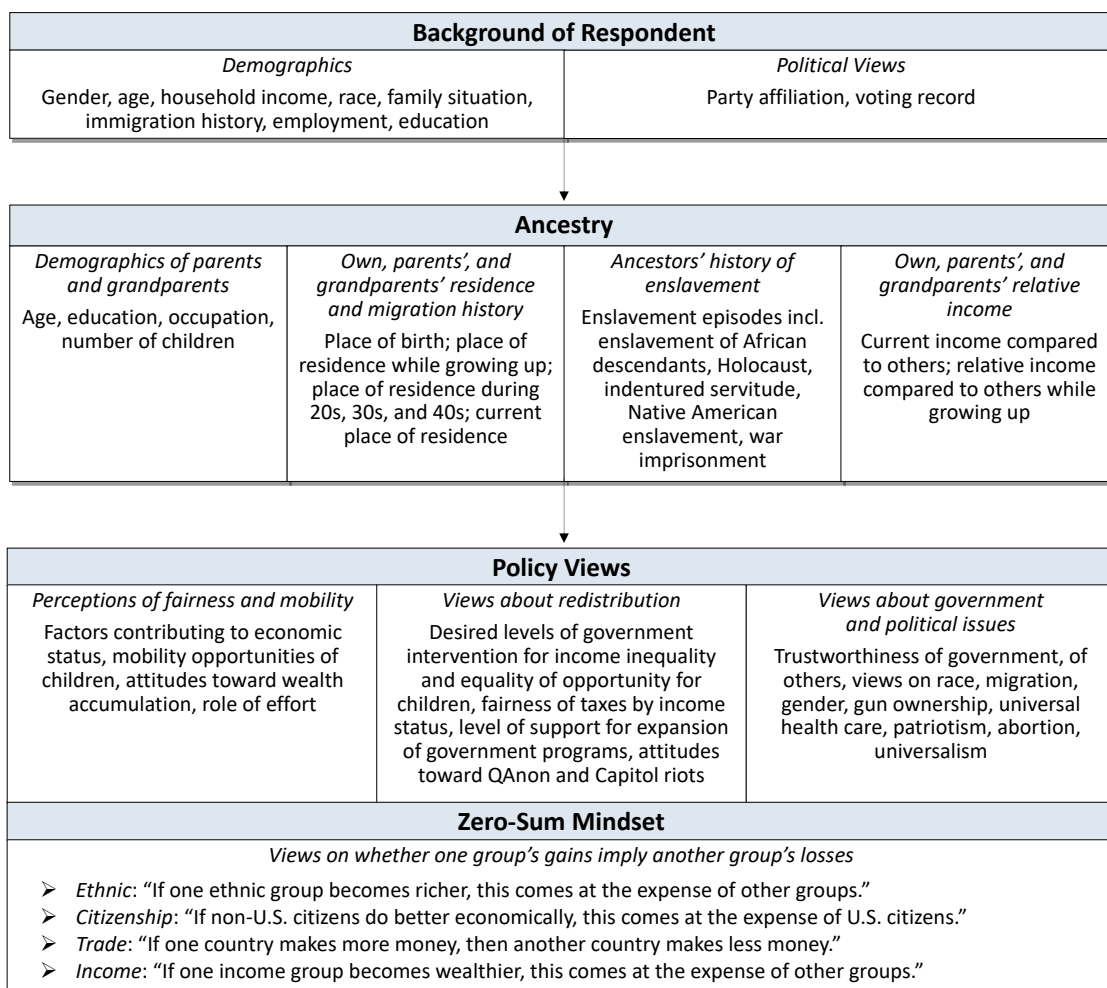


Figure 1: Block Diagram of Survey Flow

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, rather than in the belief that a particular setting is zero-sum. Therefore, it is critical to measure zero-sum thinking using multiple questions. Respondents’ answers to any single question could be influenced by other factors besides zero-sum thinking. For example, the answer to the question which asks about different ethnic groups might be heavily influenced by perceptions about race in the U.S. We are instead interested in zero-sum as a mindset.

Furthermore, the use of multiple domains for the questions helps to ensure that the responses are not simply influenced by, for example, one’s political leaning. If one is more liberal, then one 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 contrast, the scenarios for international trade and ethnic groups may be less influenced by political views. By triangulating responses to multiple questions, we can ensure that our constructed measure reflects zero-sum thinking and not other traits which might factor into respondents’ answers.

The distributions of answers to each question are shown in Figure 2. We assign each answer the integer value indicated above, creating measures that are increasing in how zero-sum a respondent’s view is. We see significant variation in views with distributions that appear fairly bell-shaped. While the distributions are somewhat similar across questions, there are important

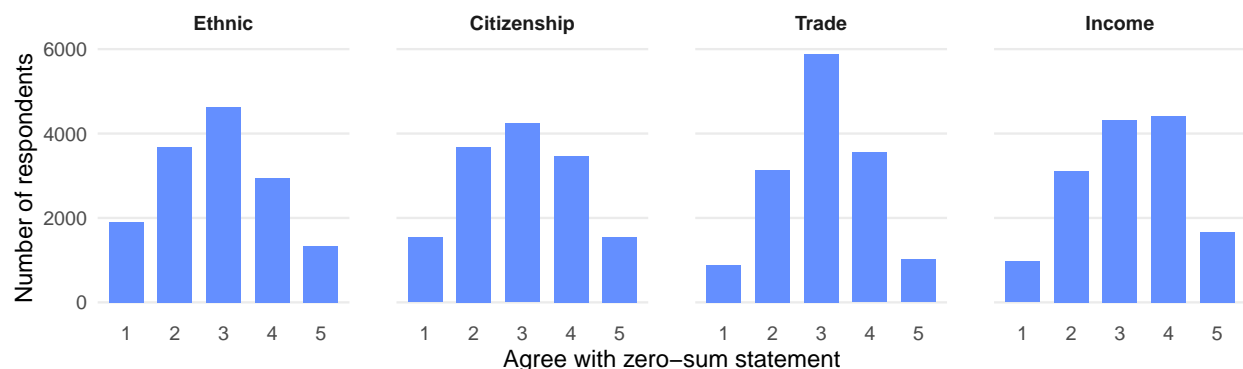


Figure 2: Distributions of Responses to Zero-Sum Questions

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

differences. Respondents tend to report a more zero-sum view when asked whether the wealth of the rich comes at the expense of others. In contrast to the other questions, here, “agree” is the most common response. Respondents 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.”

The first check that we implement with the data is to see whether we find evidence of an underlying zero-sum worldview that is reflected in these questions, which ask about very different domains. We find first that the degree to which a person’s view is zero-sum is highly correlated across questions, with correlation coefficients ranging from 0.25 to 0.56.<sup>1</sup> The correlations are not perfect, as respondents have a variety of beliefs and values – e.g., related to race, immigration, wealth, trade, etc. – that affect how they answer specific questions. 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. These estimates are reported in Table 2. Implementing this, we uncover one underlying factor – the first principal component – which is positively related to all four zero-sum measures. The estimated weights for each question are all the same sign and even very similar in magnitude, ranging from 0.40 and 0.55, suggesting the presence of a single underlying factor, which we interpret as zero-sum thinking. The factor has significant explanatory power with an estimated

<sup>1</sup>These correlations are shown in Appendix Table A3.



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

Question	1st PC (Eigenvalue: 2.26)	2nd PC (Eigenvalue: 0.78)
If an ethnic group becomes richer, this comes at the expense of other groups	0.55	-0.25
If non-U.S. citizens do better economically, this is at the expense of citizens	0.40	0.88
In international trade, if one country makes more money, then the other makes less	0.52	-0.02
If one income class becomes wealthier, it is at the expense of others	0.52	-0.39

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

eigenvalue of 2.26.

The estimates also identify a second underlying factor, although it has much less explanatory power than the first factor, with an eigenvalue of 0.78. The question that loads positively on the second principal component is the question that describes a scenario involving immigrants and U.S. citizens. All other questions load with much smaller and negative coefficients. Guided by the factor loadings, we interpret the second principal component as capturing anti-immigrant sentiment; namely, what some refer to as “nativism,” which is the desire to protect the interests of native-born inhabitants against immigrants.

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

#### ***D. Description of Basic Characteristics of Zero-Sum Thinking***

Figure 3 shows how the average zero-sum measure varies across demographic groups. First, older respondents tend to be less zero-sum. We return to the question of age versus cohort effects and their origins in Section 4D. Second, men tend to be more zero-sum than women, which is in line with prior work that suggests that the “dominant group” (here, men relative to women) are more likely to espouse zero-sum beliefs (e.g., Wilkins et al., 2015).

Third, Black and Hispanic/Latino respondents tend to be more zero-sum than white re-

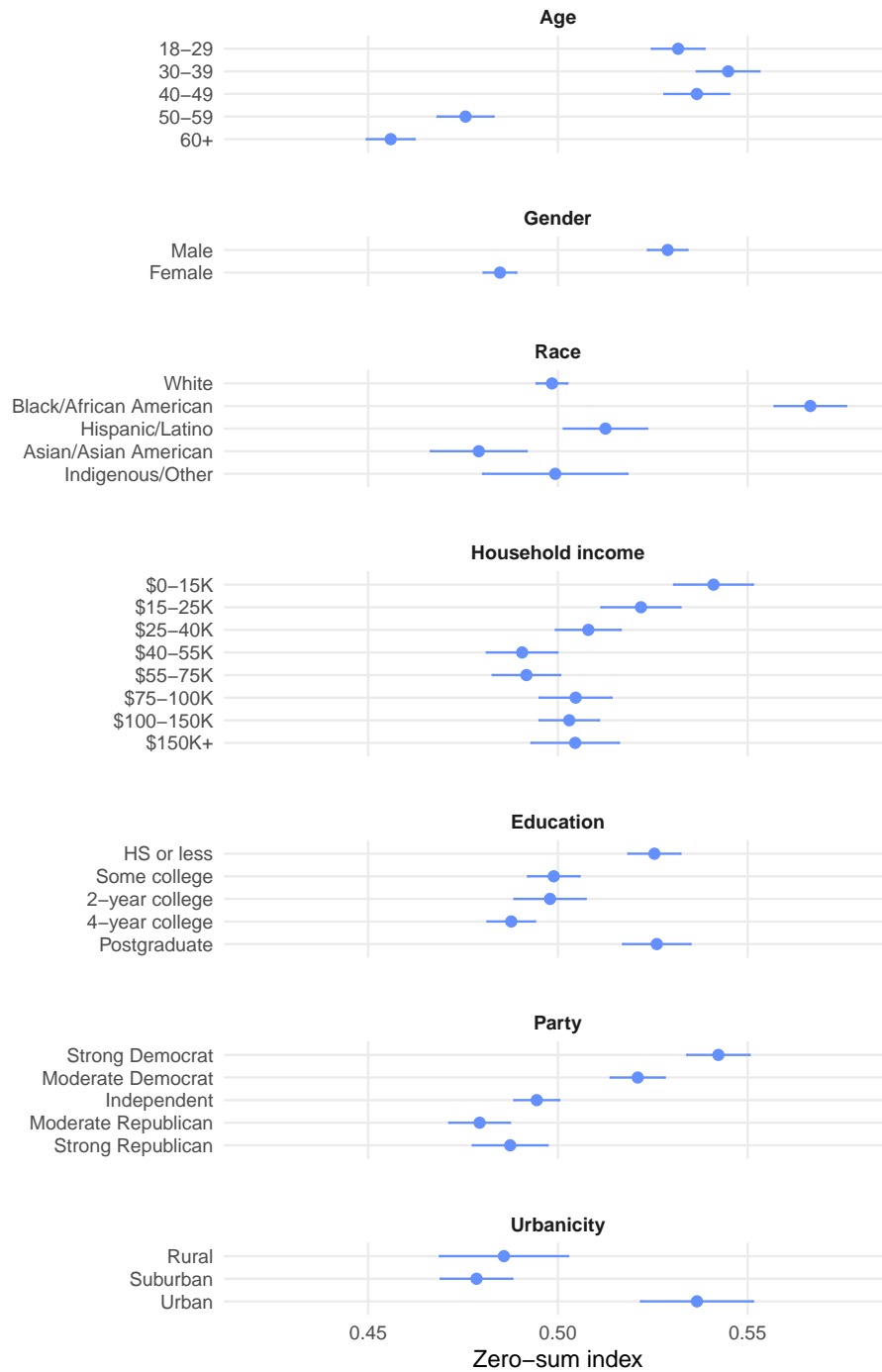


Figure 3: Average Zero-Sum Index by Demographic Group

Notes: For the question about gender identity, respondents were able to choose “Other gender identity.” Relatively few (73) respondents selected this option, thus this group is not shown in the figure. However, on average, respondents who chose this option were slightly more zero-sum than those who chose “Male” or “Female.” Horizontal bars are 95% confidence intervals.

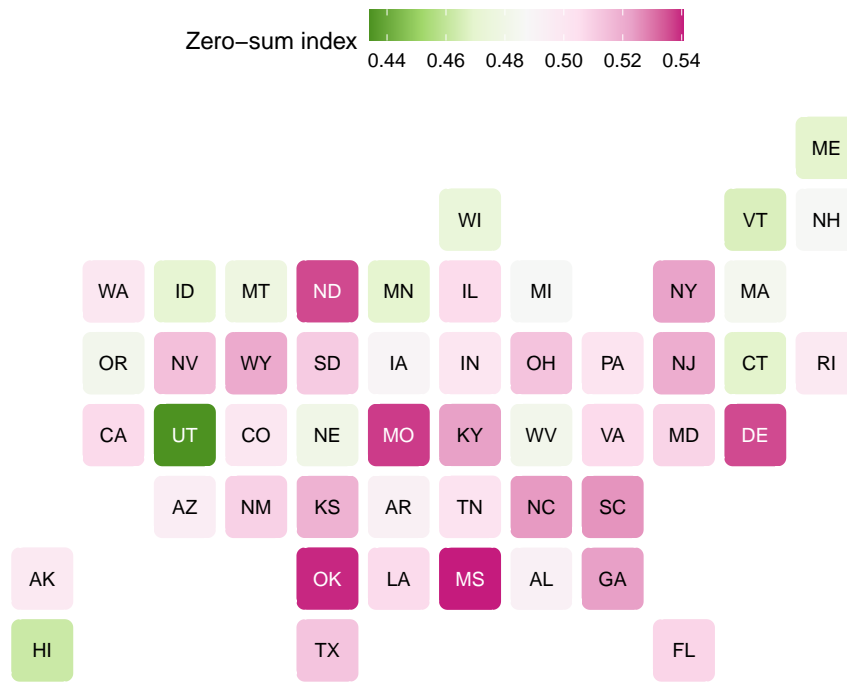


Figure 4: Average Zero-Sum Index by Respondent's State of Residence

spondents. We explore the relationships among race, immigration status, the experience of enslavement, and zero-sum thinking in Section 4. Fourth, the lowest-income respondents – those with a household income under \$25,000 – tend to be slightly more zero-sum than higher-income respondents. Fifth, more educated respondents are generally less zero-sum, with the exception of respondents with a postgraduate degree (which includes those with a master's degree, an M.B.A., Ph.D., J.D., or M.D.). Finally, zero-sum thinking is correlated with partisan affiliation: Republican individuals exhibit less zero-sum thinking on average. In Appendix Table A7, we show that these patterns also hold in a multivariate regression where we include all individual covariates simultaneously.

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

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

We now turn to an exploration of the potential political consequences of zero-sum thinking. We examine the association between our measure of zero-sum thinking and views about politics and policy. Our estimating equations take the following form:

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

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

#### A. Political Preferences

We begin by considering respondents' political affiliation, in particular, the left-right dimension, by asking individuals about their political leaning on a Strong Democrat to Strong Republican scale.

In the raw data, we observe a highly significant, positive relationship between the zero-sum index and the likelihood of being a Democrat.<sup>2</sup> This also means that we observe a negative relationship between zero-sum thinking and Republican political affiliation. However, zero-sum thinking is not fully or even mainly explained by partisan attachment. In Figure 5, we show that although the average level of the zero-sum index is different between Democrats and Republicans, the distributions are approximately equal in spread; that is, there are Republicans who are comparatively quite zero-sum and Democrats who are not very zero-sum. Moreover, a large fraction of both Democrats and Republicans exhibit moderate levels of zero-sum thinking.<sup>3</sup>

#### B. Policy Views

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

Figure 6 shows correlations of zero-sum thinking with important policy views. We compute indices that measure the respondents' pro-redistribution preferences as well as their race, anti-

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<sup>2</sup>Appendix Figure A2 shows the proportion of Democrats and Republicans in each quartile of zero-sum thinking.

<sup>3</sup>Appendix Figure A3 shows the distribution of responses to the four component zero-sum questions by party, and indicates that Democrats are more zero-sum, on average, on issues related to ethnicity, trade, and income, but Republicans are more zero-sum in regard to citizenship.

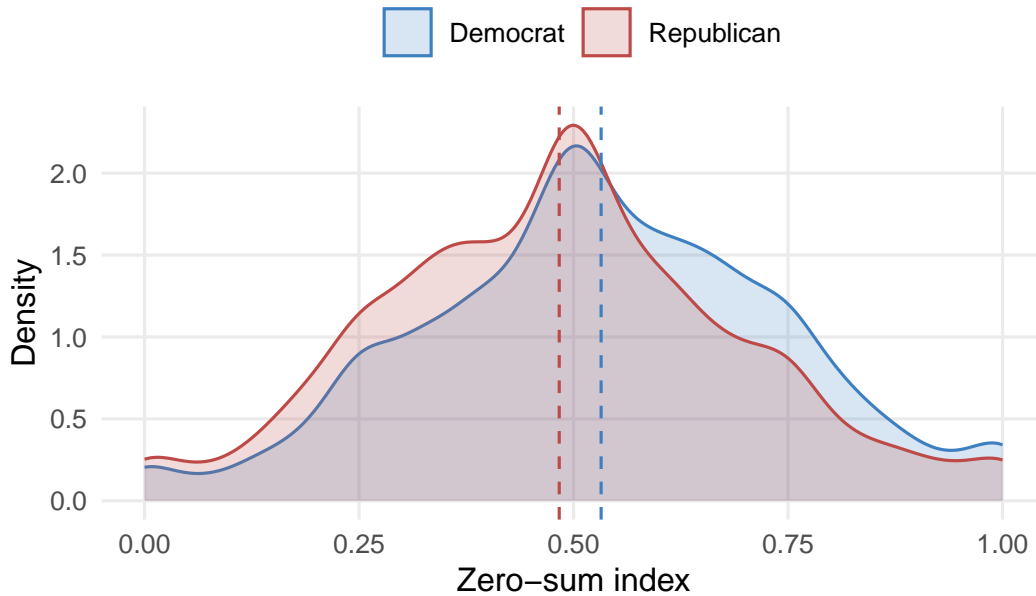


Figure 5: Density of Zero-Sum Index by Party

*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.

immigrant, and gender attitudes using the first principal component of the relevant questions from our survey. The questions that constitute each of the indices are listed in Appendix Table A5, along with their factor loadings in the principal component analysis. Appendix Figure A4 shows the full set of correlations with the component zero-sum questions and each of the policy questions in our survey.

We find that more zero-sum thinking is associated with support for redistribution, a higher awareness of racial and gender discrimination, as well as more pronounced anti-immigrant sentiment.

These correlations between a zero-sum mindset and policy views are in line with this intuition. On redistribution policy, if an individual has a zero-sum view of the world, then the wealth and income of some has come at the cost of others without the same level of wealth or income. In this setting, there is a negative spillover from the rich or wealthy on the less fortunate. As shown theoretically in Piketty et al. (2014), there is then a role for the government to redistribute income and raise aggregate welfare. This could occur, for example, through an income tax that is used to provide basic public goods like roads, schools, and parks, and even public healthcare, public pensions, and social programs. If one’s view is not zero-sum, then the income and wealth of

the rich did not come at the expense of others. In this case, taxing and redistributing wealth is considered to be more unfair and is likely to be less efficient as well. Thus, one's preferred redistribution policy is very different depending on whether they implicitly view the world as zero-sum.

Related to group competition, those with more zero-sum views are more likely to perceive in- and out-group competition and be aware of racial or gender discrimination. Similarly, they may perceive that immigrants are in competition for resources with non-immigrants.

Our baseline results use the index derived from the four main zero-sum questions in our survey; results are similar, albeit of smaller magnitude, when we remove the zero-sum question that is likely to be mechanically related to each policy outcome and compute a zero-sum index based on three questions alone. Specifically, for the redistribution outcomes, we remove the income zero-sum question; for attitudes towards immigration and towards race we remove the questions about citizenship and ethnicity, respectively. The second column of Figure 6 shows that using the first principal component without the mechanically associated question yields qualitatively similar results. Appendix Table A6 compares the factor loadings for these three-question indices of zero-sum thinking to the loadings for the baseline index.

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

One concern is that our zero-sum measure might be picking up the impact of other core beliefs that have been shown to correlate with policy views such as beliefs that luck is more important than effort for success (Alesina and Glaeser, 2004), a universalist moral view (Enke, 2019), views on the importance of tradition (Giuliano and Nunn, 2021), perceived mobility (Alesina et al., 2018), and generalized trust (Algan and Cahuc, 2010). All of these could potentially shape policy views in the same direction as zero-sum thinking. Reassuringly, Figure 7 shows that the correlation between zero-sum thinking and policy views holds even when controlling for other fundamental attitudes and beliefs.<sup>4</sup>

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<sup>4</sup>Appendix Figure A5 performs Gelbach decompositions (Gelbach, 2016) of the effect of zero-sum views, showing more formally that it remains significant and important even if we control for all fundamental attitudes simultaneously.

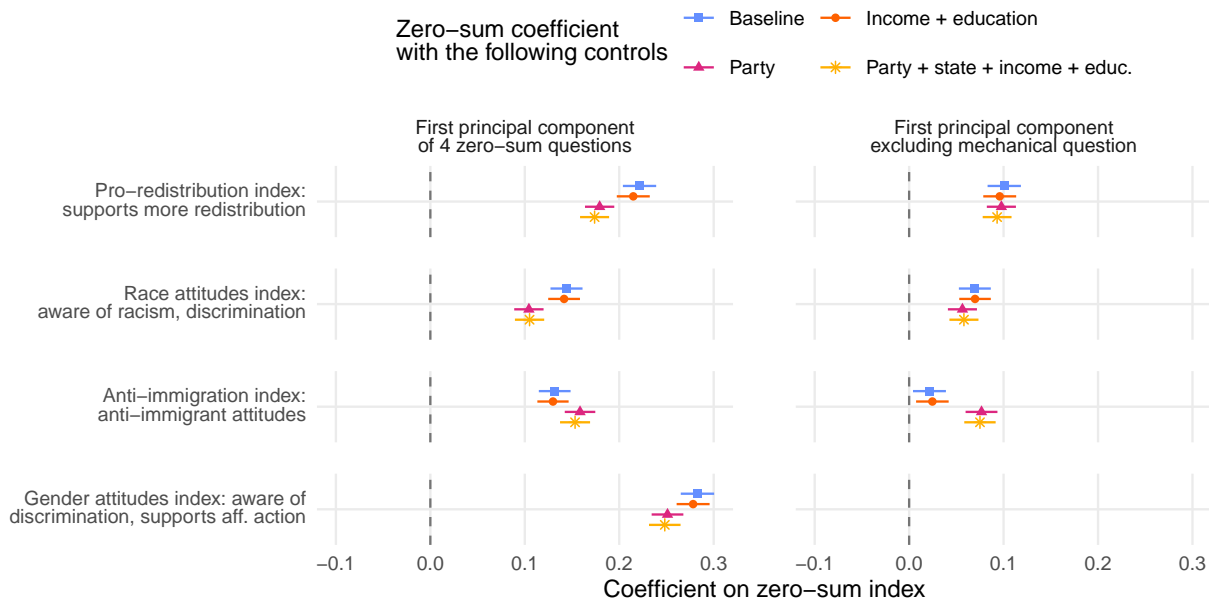


Figure 6: Zero-Sum Thinking and Policy Views

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

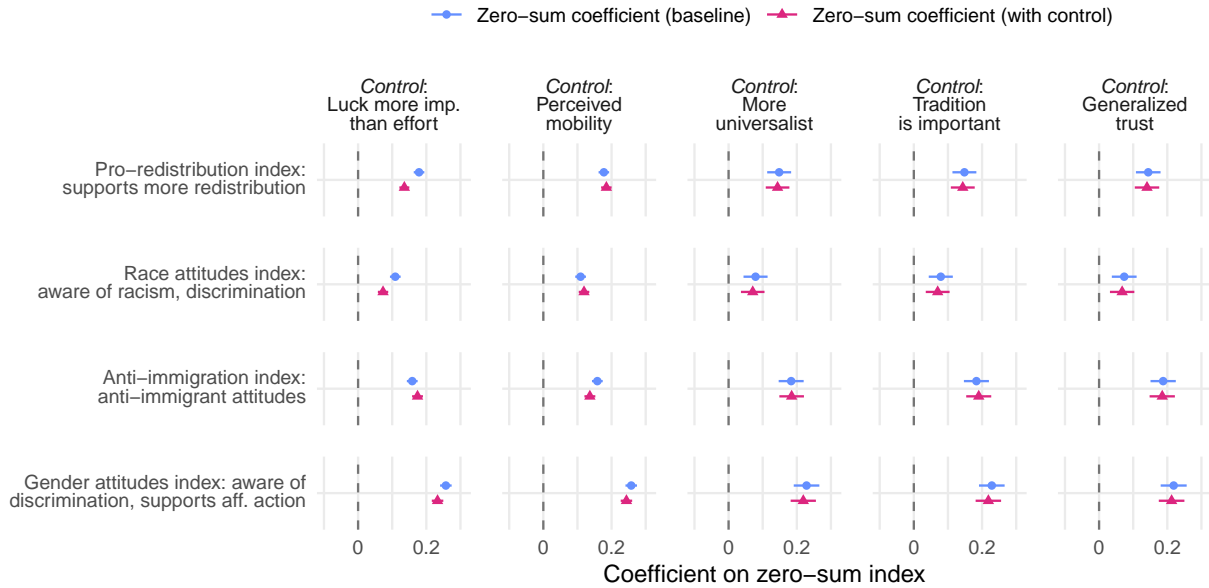


Figure 7: Zero-Sum Thinking and Policy Views, Controlling For Other Core Beliefs

*Notes:* Each coefficient is from a separate regression with controls for age, gender, and their interaction, as well as whether the respondent was born in the United States and fixed effects for survey wave, race, party, household income, education, and current state. The two estimates for each outcome correspond to the baseline specification, as well as specifications that add to the regression a measure of another core belief or attitude: whether the respondent thinks luck is more important than effort, their perceptions of economic mobility, the degree to which they are a moral universalist, whether they think tradition is important, and whether they think people can generally be trusted. The latter three attitudes are only available for the fifth wave of the survey, so these regressions are estimated on a smaller sample (about 3,000 respondents, compared to about 14,500 respondents for the first two). For each combination of outcome and control variable, the baseline regression is restricted to observations without the control missing, so that each pair of coefficients is estimated on the same sample. Outcomes, regressors, and measures of other attitudes are standardized to have mean zero and standard deviation one. Index measures are the first principal component of the relevant questions. Horizontal bars are 95% confidence intervals. Appendix Figure A5 performs Gelbach decompositions controlling for all core beliefs simultaneously.



### 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 trait that affects individuals' views of the origins of wealth and the acceptability of inequality, which in turn affects views on policy, which in turn affect views on politics, then we should expect similar relationships to hold even beyond the United States.

We examine this using data from the World Values Survey (WVS), which includes one question, asked to approximately 192,000 respondents across 72 countries, about the extent to which they view wealth as zero-sum. Respondents are given two opposing statements, one that is zero-sum and another that is positive-sum. The zero-sum statement is "People can only get rich at the expense of others." The positive-sum statement is "Wealth can grow so there's enough for everyone." The respondents are asked to report their views on a ten-point scale, which lies between the two extremes.<sup>5</sup> We measure the variable so that it is increasing in how zero-sum the view is. For ease of interpretation, we also normalize it to lie between zero and one.

In the last wave of our survey, we ask the same WVS question to validate it against our zero-sum composite index. We find that, across the sample of 3,000 individuals, the two are positively correlated and the relationship is highly significant ( $\rho = 0.19$ ;  $p = 0.001$ ). The tightness of the relationship can also be seen visually in Appendix Figure A8, which reports the binscatter bivariate relationship between the two measures. Thus, although the WVS question does focus on a specific scenario – 'wealth' and 'getting rich' – it does appear to capture a lot of the same variation as our richer multi-question index. Therefore, we view it as a valid measure of zero-sum thinking across the globe.

Using the measure, we then examine the relationship between a person's zero-sum view of the world and their political beliefs. The question asks, "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).<sup>6</sup> Figure 8 shows the bivariate (binscatter) 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. Appendix Table A8 reports the estimated

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

<sup>6</sup>This is variable E033 in the WVS.

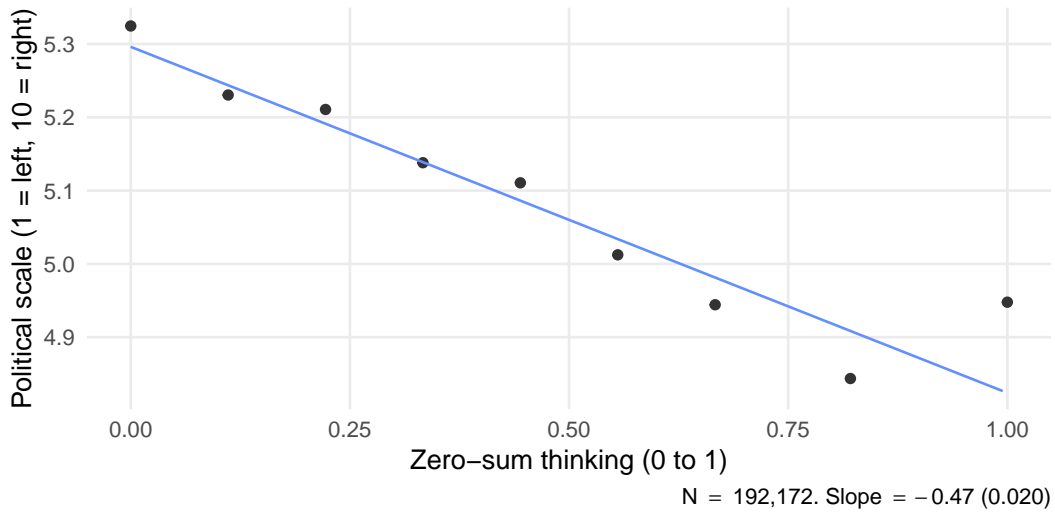


Figure 8: Zero-Sum Thinking and Political Affiliation Across the World

*Notes:* The figure reports a binscatter partial correlation plot of the relationship between an individual’s zero-sum thinking and their political orientation, conditional on country-by-survey-wave fixed effects. Data are from the World Values Survey.

relationship for each country, and country-specific plots of the relationship between zero-sum beliefs and political leanings are reported in Appendix Figures A6 and A7.

We also consider the generality of the relationship between zero-sum thinking and the policy outcomes we have examined. Given the diversity of environments outside of the United States and the absence of appropriate survey questions in the WVS, we are unable to consider policy measures related to perceived discrimination and support for affirmative action for African Americans and women. However, we do consider the relationship between zero-sum thinking and preferences for redistribution and immigration restrictions.

The WVS asks respondents the extent to which they agree with the statement that “Income should be more equal” relative to the converse statement that “there should be greater incentives for individual effort,” as well as whether respondents agree with the statement “The government should take more responsibility to ensure that everyone is provided for” relative to “People should take more responsibility to provide for themselves.” We use these two questions to measure preferences for redistribution.<sup>7</sup> For both, respondents choose an integer on a ten-point scale which indicates the degree to which they agree with one statement; we orient these variables so that they are increasing in agreement with the more redistributive point of view.

To measure anti-immigrant sentiment, we use a question that asks the respondent “How about

<sup>7</sup>These are variables E035 and E037, respectively. Both were asked in waves 2-7.

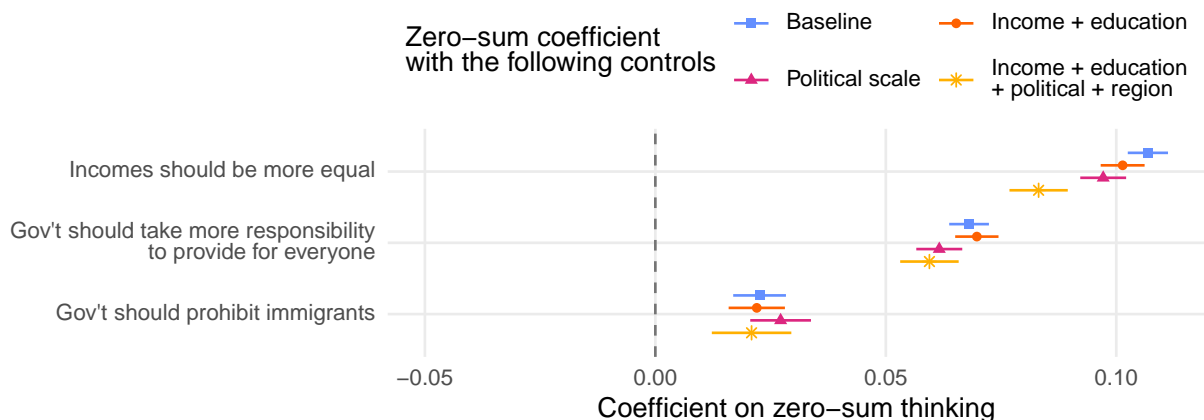


Figure 9: Zero-Sum Thinking and Policy Views Across the World

*Notes:* Each coefficient is from a separate regression with controls for age and age squared, gender, and their interaction, as well as country-by-wave fixed effects. The four estimates for each outcome correspond to the baseline specification, as well as specifications that add (1) income and education, (2) political affiliation on a left-right scale, and (3) income, education, political affiliation, and region fixed effects. Outcomes and regressors are standardized to have mean zero and standard deviation one. Horizontal bars are 95% confidence intervals. Data are from the World Values Survey. For the baseline specification, the numbers of observations in each of the three regressions are, from top to bottom, 245,737, 247,177, and 124,692. Adding income and education fixed effects, they are 205,940, 207,041, and 108,985. Adding political scale fixed effects, they are 190,257, 190,674, and 96,329. Adding income, education, political scale and region fixed effects, they are 117,314, 117,519, and 55,730.

people from other countries coming here to work. Which one of the following do you think the government should do?" Respondents can then 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 from coming here from other countries.<sup>8</sup> We orient this variable so it is increasing in preference for immigration restrictions.

Figure 9 shows the relationship between zero-sum thinking and these three policy questions. We find that zero-sum thinking is related to both pro-redistribution and anti-immigration attitudes, consistent with what we find for the U.S. sample in Figure 6. As previously, these relationships are robust to the inclusion of income, education, and region fixed effects, as well as controls for the left-right political affiliation scale described above.

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

<sup>8</sup>This is variable E143. It was asked in waves 3-5 and wave 7.

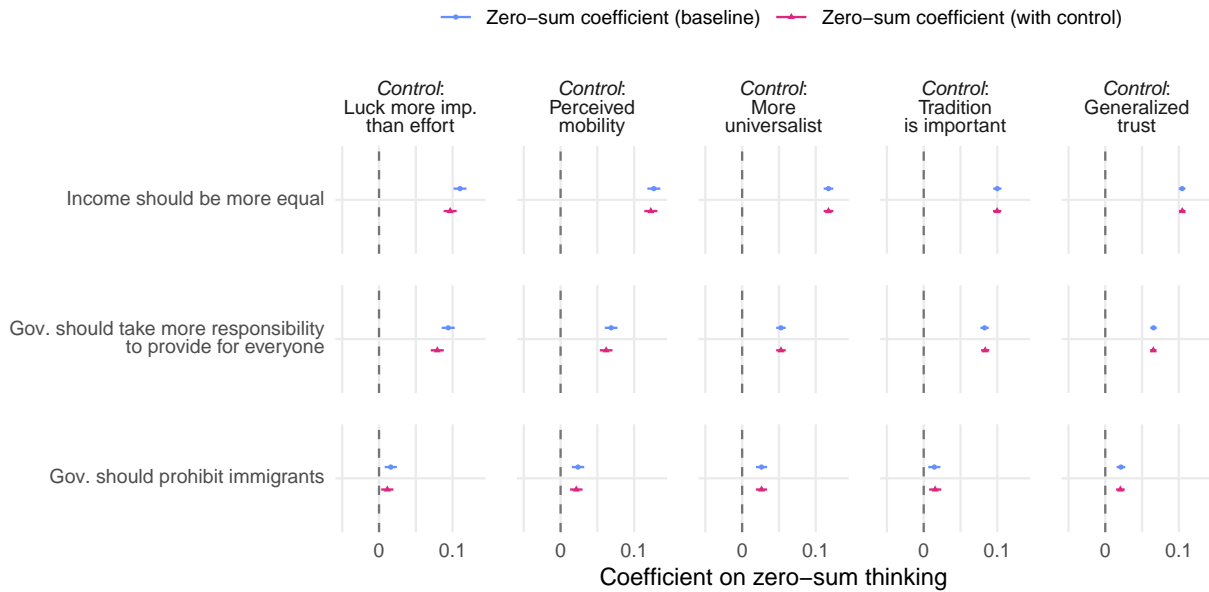


Figure 10: Zero-Sum Thinking and Policy Views Across the World, Controlling For Other Core Beliefs

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

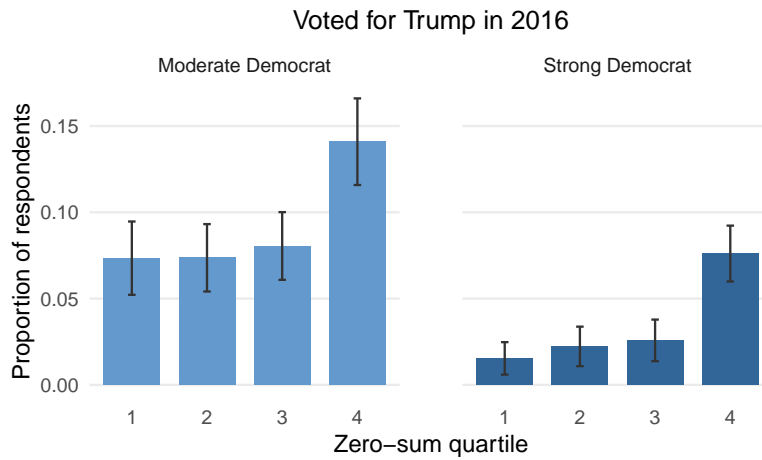


Figure 11: Democrats Voting for Trump by Zero-Sum Quartile

Notes: Vertical bars are 95% confidence intervals.

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

As we have seen, zero-sum thinking does not align perfectly with party affiliation. Instead, it appears to correlate with politics and policy views in complex ways that are not initially obvious. In this section, we further develop this aspect of zero-sum thinking by highlighting cases where we feel that it helps to better understand some of aspects of U.S. political and policy views.

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

One of the surprising facts that came out of the 2016 Presidential election, in which Donald Trump was elected over Hillary Clinton, was the extent to which Democrats voted for Donald Trump. According to voting statistics, about 13% of individuals who voted for Trump had voted for Barack Obama in the previous election. Among voters who supported Bernie Sanders in the 2016 Democratic primaries, 24% did not vote for Hillary Clinton in that election. An estimated 12% instead voted for Trump and 12% did not vote.

While there are many factors that generated this outcome, we find that zero-sum thinking is a strong predictor of this pattern. This is illustrated by Figure 11, which shows the relationship between an individual’s level of zero-sum thinking and whether they report voting for Donald Trump in the 2016 Presidential election, for both individuals who report being moderate Democrats and strong Democrats. We see that being in the top quartile of zero-sum thinking is strongly predictive of voting for Trump.

In general, Donald Trump's rhetoric was very zero-sum. 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, the anti-establishment versus the Washington elite, etc. Such messages appeal to individuals who have a zero-sum view of the world. Thus, although Democrats in general tend to be more zero-sum in their thinking than Republicans, *within* the Democratic Party, those who were most zero-sum found Donald Trump more appealing and were more likely to vote for him.

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

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

The demographic correlates of zero-sum thinking that we document suggest that the former groups tend not to view the world in zero-sum terms. The rural population is less zero-sum than the urban population, middle-income Americans are the least zero-sum income category, and white Americans are one of the least zero-sum of the racial groups in the U.S. If one views the world in non-zero-sum terms, then programs that burden the wealthy to support the poor are seen as unfair. By contrast, urban, highly educated populations tend to be more zero-sum than average. These populations are more likely to believe that the wealth of the rich comes at the expense of others, so they do not consider unfair programs that burden the wealthy to provide broad-based support to all.

Along similar lines, zero-sum thinking helps explain why younger people are more supportive of social welfare programs than older people. This can be viewed as puzzling since younger populations, because they will live longer into the future, will be more likely to bear the future costs of such programs. Our data suggest that this could be explained by the fact that younger cohorts are much more zero-sum than older cohorts. Thus, they view such programs as being justified and even necessary on equity grounds.

### *January 6th attack on the Capitol*

On January 6, 2021 a large group of supporters of Donald Trump, who had lost the 2020 presidential election, stormed the Capitol Building in Washington, D.C. Their aim was to prevent a joint session of Congress from counting the electoral college votes, which would formalize the victory of president-elect Joe Biden.

There are multiple ways of viewing the events of January 6. Through a non-zero-sum lens, it was an attack on the democracy of the United States, making all in the country worse off through weakened democratic institutions. It was not simply one party attempting to gain while the other party lost. By contrast, in a purely zero-sum view, everyone is not made worse off (or better off). Instead, one party gains at the expense of another party. Thus, January 6 was an attempt by the Republican Party to use whatever means they could to transfer power away from the Democrats.

Given this, we expect individuals who hold a more zero-sum view to be more sympathetic to the January 6 Capitol rioters. It is important to keep in mind that individuals who are more zero-sum tend to be Democrats, not Republicans. Thus, if we do find such a pattern, it is not due to party affiliation.

To examine these relationships empirically, we asked approximately three thousand respondents from the third wave of our survey, which was conducted in February 2021, just over a month after the attack, “How sympathetic do you feel towards those who were charged for entering the U.S. Capitol building on January 6, 2021?” Our intention was to measure the extent to which the respondent could understand the point of view of the Capitol attackers. Individuals could choose an answer that ranged from 1 to 10, where 1 was the least sympathetic and 10 the most.

The relationship between our measure of an individual’s zero-sum thinking and their perception of the Capitol attack is shown in Figure 12a. The figure shows that individuals with a more zero-sum worldview show more sympathy towards the Capitol attackers, and this relationship is present when we examine the relationship for Republican and Democratic respondents separately. Thus, the aggregate pattern does not simply reflect the relationship between zero-sum thinking and political affiliation.

Interestingly, we also see that for individuals who have a low or moderate zero-sum view (below the 4th quartile), Republicans show more sympathy than Democrats. However, for those who are the most zero-sum (4th quartile) the sympathy of Democrats is just as high as Republicans. In short, this shows clearly that beyond party affiliation, zero-sum thinking cuts

across partisanship and is an important determinant of how respondents viewed these events.

### *QAnon*

An important recent event in U.S. politics is the rise of QAnon, which is a belief in the conspiracy theory that the United States (and the world) is run by a shadowy cabal of global elites, Hollywood actors, high-ranking government officials, business tycoons, media figures, and medical experts, who are enriching themselves at the expense of ordinary people. Believers think that this cabal orchestrated a global child sex trafficking ring that engaged in the abuse and satanic sacrifice of children, and that the Trump administration was trying to stop these activities and to bring those responsible to justice. The movement also espouses other conspiracies regarding the Kennedy assassinations, UFOs, 9/11, attempts at a *coup d'état* directed at the Trump administration, and the imminent collapse of the cabal in an event known as “The Storm,” where thousands of members and affiliates would be arrested for their crimes (Enders et al., 2022).

Although in the media QAnon is portrayed as being very closely aligned with support for the Republican Party, studies examining these beliefs do not find this. Surveys conducted and analyzed by Enders et al. (2022) show that individuals from both political parties are roughly equally likely to believe in QAnon. Along similar lines, Uscinski et al. (2022) also find that beliefs in conspiracy theories in general are not predicted by political affiliation.

The possibility that zero-sum thinking might play a role in predicting which individuals believe in certain conspiracy thinking like QAnon arises from the fact that QAnon’s core tenets are zero-sum in nature. Consider these QAnon beliefs, which are all zero-sum: (1) The world is ruled by a global elite whose members conspire behind the scenes to enrich themselves and keep the masses poor; (2) They run a satanic child sex trafficking ring (those running the ring benefit at the expense of those being trafficked); (3) They were plotting a coup to overthrow the U.S. President Donald Trump.

Given this possibility, we check for the association between zero-sum thinking and one’s belief in the validity of QAnon. We find that the two are highly related. Individuals who have a more zero-sum view are more likely to believe that there is some truth in QAnon. This is shown in Figure 12b, which reports the raw relationship between our zero-sum measure and the extent to which respondents think that “QAnon contains some truths about U.S. politics.” The sample of approximately 3,000 individuals was collected in February 2021, during the third wave of our



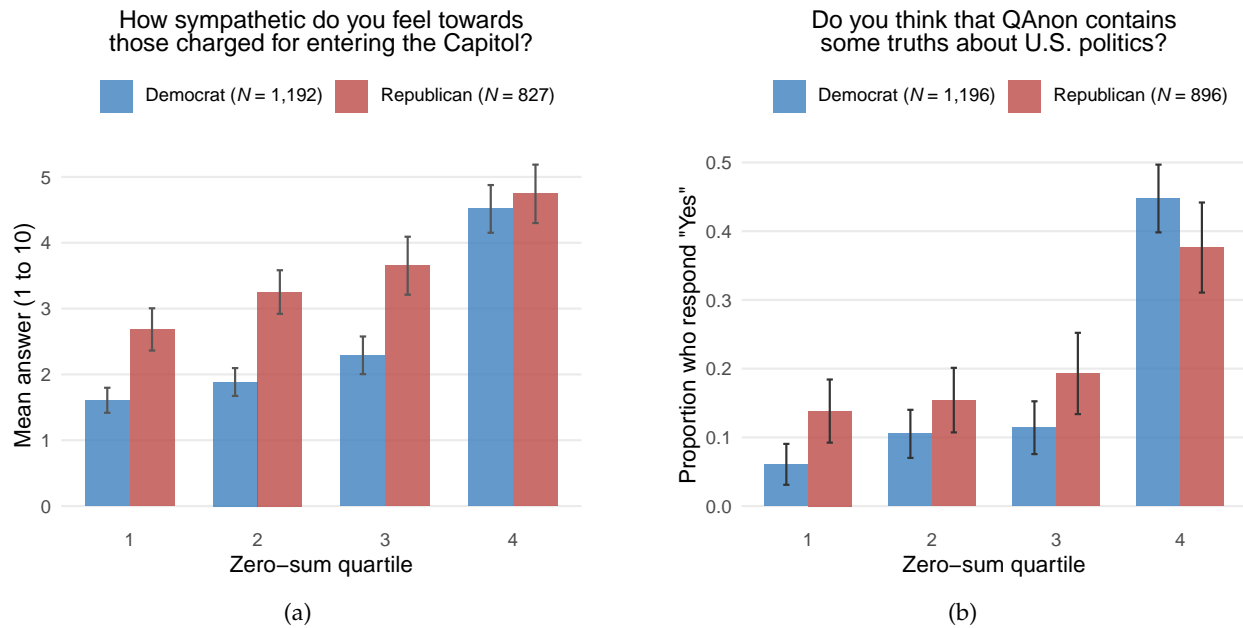


Figure 12: Zero-Sum Thinking and U.S. Political Events

Notes: Vertical bars are 95% confidence intervals.

survey and in the aftermath of the January 6 Capitol riots, which was a watershed moment for the QAnon movement. Figure 12b also reports results for Democrats and Republicans separately. This reveals again that for those who are the most zero-sum (4th quartile), the proportion of Democrats who think that QAnon contains some truths about U.S. politics is higher than the corresponding proportion of Republicans.

#### *Within-party differences and divisions*

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

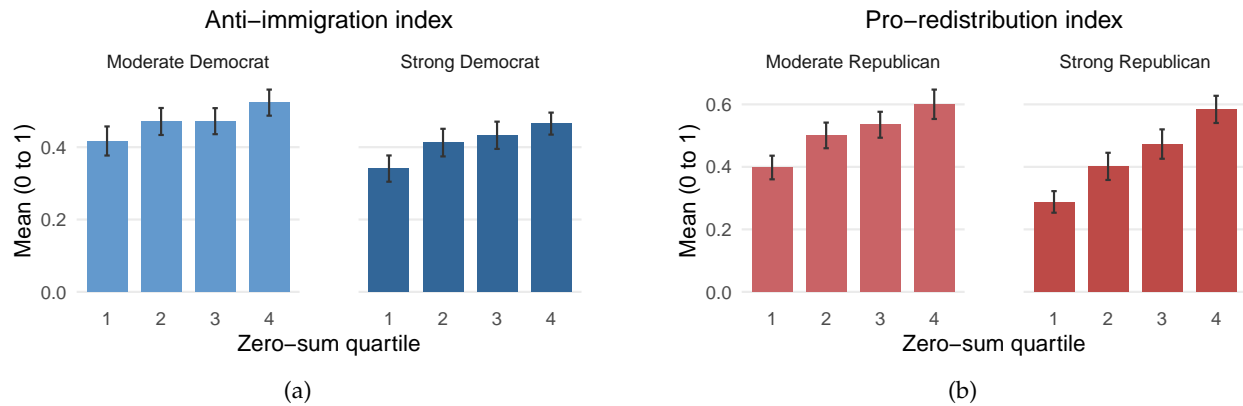


Figure 13: Zero-Sum Thinking and Within-Party Differences

Notes: Vertical bars are 95% confidence intervals.

Consider views about immigration, measured by our anti-immigration index. The relationship between zero-sum thinking and anti-immigrant views for Democrats is shown in Figure 13a. We see that those who hold a more zero-sum view of the world are more concerned about immigration and hold policy views that are more strongly opposed to increased immigration. This is expected, since a zero-sum worldview predicts that gains that accrue to newly-arrived immigrants will tend to come at the expense of others who are already in the United States.

We next consider support for government redistribution policies, as measured by our pro-redistribution index, among Republicans. This is shown in Figure 13b, where we observe a positive relationship between a zero-sum view of the world and support for government redistribution. Even within the party, the most zero-sum individuals are more likely to see a role for the government to redistribute income – by taxing the rich more than the poor, equalizing differences in opportunities and outcomes between poor and rich families, and through specific policies like universal healthcare.

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

We now turn to the question of the determinants of zero-sum thinking. Our analysis examines factors that could plausibly affect zero-sum thinking and are relevant given the historical context of the United States; namely, economic mobility, immigration, and enslavement.

One of the defining characteristics of the United States is that it was the “land of opportunity,” where rates of upward mobility were higher than in similar industrialized nations (Long and

Ferrie, 2013). We expect that individuals who either experienced themselves or whose ancestors experienced upward economic mobility would have less zero-sum views today. In such historical environments with sustained economic growth, the world would have actually been less zero-sum in nature, which may have influenced perceptions for those individuals and their descendants.

Immigration is another defining feature of the United States, 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). We expect the experience of immigration to be associated with less zero-sum thinking, since immigrants typically made a better life for themselves in the United States and experienced better living conditions. In addition, since immigrants actually improved the economic standing of those around them, their success does not appear to have come at the expense of others (Sequeira et al., 2020). This perception of the sources of their economic success could have also made 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, more than in other developed nations, a history of enslavement and subsequent racial tension permeates the social and political fabric of American society. Chattel slavery is an economic and social system that is nearly fully zero-sum. An enslaved individual has their resources taken by the enslaver. The enslavers and enslaved do not engage in double-sided matching or mutual agreements of exchange that create value for both parties. Given this, we expect that individuals who have ancestors that experienced enslavement or its aftermath to have views that are more zero-sum.

While enslavement is an extreme form of coercion, we might expect similar effects on zero-sum thinking for other forms of coercion. There are many examples of this throughout U.S. history, including the internment of Japanese people during World War II, the forced displacement of Indigenous people and the placement of children in residential boarding schools, and the indentured servitude of immigrant labor. While it did not occur on U.S. soil, imprisonment during the Holocaust is another important event that is potentially relevant for the ancestors of many U.S. citizens today. We expect exposure to any of these events to also result in a more zero-sum view of the world.

### *Estimating equation*

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

The equations we estimate take the following form:

$$\begin{aligned} \text{Zero Sum}_i = & \beta_r \text{Respondent Experience}_i + \beta_p \text{Parents Experience}_i \\ & + \beta_{gp} \text{Grandparents Experience}_i + \mathbf{X}_i \boldsymbol{\Gamma} + \alpha_{s(i)} + \alpha_{r(i)} + \varepsilon_i \end{aligned} \quad (2)$$

where  $i$  indexes survey respondents,  $r$  denotes their race, and  $s$  denotes their state of residence at the time. The variable  $\text{Respondent Experience}_i$  is a measure of the past experience of respondent  $i$ .

$\text{Parents Experience}_i$  and  $\text{Grandparents Experience}_i$  denote the measured experience of respondent  $i$ 's parents and grandparents respectively. Given that an individual typically has two parents and four grandparents, these measures either average across both parents and all grandparents, or we include measures for individual ancestors. The estimates  $\beta_p$  and  $\beta_{gp}$  provide evidence for the direct transmission of cultural traits. As we explain in more detail, in some specifications,  $\text{Parents Experience}_i$  and  $\text{Grandparents Experience}_i$  will measure ancestral exposure to certain environments. In these cases, the interpretation of  $\beta_p$  and  $\beta_{gp}$  is that they capture indirect transmission (to the parents or grandparents) and then direct transmission of the traits from them to the respondent.

The vector  $\mathbf{X}_{i,c,t}$  includes the following controls: individual  $i$ 's age, age squared, an indicator for their gender, the gender indicator interacted with age and age squared, and an indicator for whether the respondent was born in the U.S. We also include fixed effects for the race of the respondent,  $\alpha_{r(i)}$ , and fixed effects for their state of residence when the survey is taken,  $\alpha_{s(i)}$ .

#### **A. *Economic mobility***

The first factor that we consider is the extent to which a person or their ancestors experienced upward economic mobility during their lifetimes. We expect these episodes, which we can summarize as experiences living the "American Dream," to result in a person having a less zero-sum view of the world. Particularly during the golden age of economic growth prior to the 1970s, the common perception was that economic success was possible for anyone who worked hard enough. Thus, experiencing this success could have influenced one's view about how

zero-sum the world is. These views and narratives could then be transmitted to one's children and grandchildren.

We test for this by constructing measures of self-reported upward mobility experienced across generations. For each generation, we ask the following (sets of) questions:

1. **Currently:** Right now, compared with other families in America, would you say your own household income is:
2. **Parents' household / respondent growing up:** When you were growing up (i.e. age 7-17), compared with other families in your country back then, would you say your household income was:
3. **Grandparents' household / father growing up:** When 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:
4. **Great-grandparents' household / 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:

Respondents chose between the following options: (1) Far below average; (2) A little below average; (3) Average; (4) A little above average; (5) Far above average. Respondents could also choose "I don't know." We assign an answer to the integer values listed, constructing measures that are increasing in relative economic well-being. When responses are "I don't know," we code them as missing.

From these measures we calculate the economic mobility experienced by each generation. The respondent's experienced mobility is the difference between their current economic status and their status growing up: 1 – 2. This is the variable *Respondent Experience<sub>i</sub>* in equation (2). The respondent's parent's experienced mobility is the difference between their household income as an adult and when they were growing up: 2 – 3. This is the variable *Parents Experience<sub>i</sub>*. The respondent's grandparent's experienced mobility is the difference between their household income as an adult and when they were growing up: 3 – 4. This is *Grandparents Experience<sub>i</sub>*.

We begin the analysis by examining the unconditional bivariate relationship between each of our three measures of mobility and the zero-sum measure of the respondents. The relationships

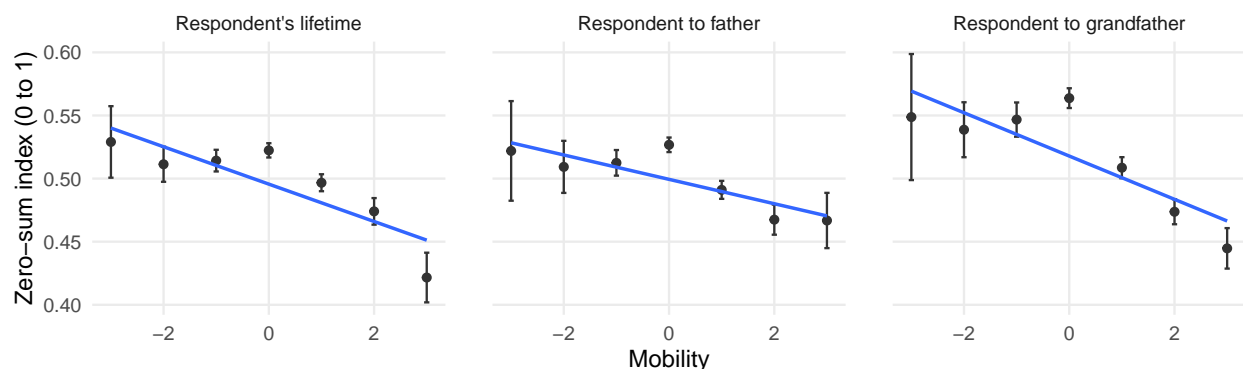


Figure 14: Zero-Sum Thinking and Ancestral Economic Mobility

Notes: Vertical bars are 95% confidence intervals.

are shown in Figure 14. For all three generations – respondents, their fathers, and their grandfathers – we find a negative relationship between experienced mobility and zero-sum thinking. The relationships are driven primarily by *upward* mobility, which is associated with a less zero-sum worldview. We find less evidence that *downward* mobility is associated with a more zero-sum worldview. Thus, while episodes of exceptional growth may induce less zero-sum thinking, episodes of exceptionally poor growth do not induce more zero-sum thinking.

We next examine the conditional relationship between mobility and zero-sum thinking by estimating equation (2). The regression estimates, which are reported in Table 3, confirm the negative relationship between mobility and zero-sum thinking observed in the raw data. According to the estimates, the effect of the respondent’s own mobility is of a similar magnitude to or even smaller than the effect of the mobility experienced by their parents, while the effect of the grandparent’s mobility is weaker than the parent’s experience. The fact that we do not find a fully monotonic decreasing effect (like we do for immigration in the next section) is potentially explained by the fact that the effect of own experience is not exactly comparable to the parent’s or grandparent’s effects. This is because the respondent, depending on their age, may not yet have fully realized the upward mobility that they will experience. For this reason, we would expect the effect for our measure of own mobility to be lower than if we could control for fully realized lifetime mobility.

The final measure of mobility that we consider is a longer-run measure that looks at the difference between the respondent’s economic well-being now and their paternal grandfather’s household when they were growing up: 1 – 4. The estimates are reported in columns 4–6 of Table 3. For the longer-run measure, we obtain estimates consistent with those of the measures for each

Table 3: Zero-Sum Thinking and Ancestral Economic Mobility

	Dependent variable: Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Respondent's lifetime mobility	-0.0213*** (0.0020)	-0.0216*** (0.0020)	-0.0214*** (0.0020)			
Father's lifetime mobility	-0.0275*** (0.0023)	-0.0274*** (0.0023)	-0.0273*** (0.0023)			
Grandfather's lifetime mobility	-0.0206*** (0.0028)	-0.0204*** (0.0028)	-0.0210*** (0.0027)			
Grandfather to respondent mobility				-0.0225*** (0.0017)	-0.0227*** (0.0017)	-0.0227*** (0.0017)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓
Race fixed effects			✓			✓
Observations	9,138	9,138	9,138	9,282	9,282	9,282
R <sup>2</sup>	0.088	0.096	0.106	0.086	0.094	0.103
Dependent variable mean	0.521	0.521	0.521	0.521	0.521	0.521
Dependent variable std. dev.	0.218	0.218	0.218	0.217	0.217	0.217

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

generation. The estimated magnitude is also very similar, which is reassuring.

Our specification includes the mobility measures from the previous generations together in the same specification. The rationale for this is that there is a mechanical relationship between the mobility measures. If mobility were high in the distant past and previous generations had high income, then mobility cannot be as high in subsequent generations. Thus, the measures will tend to be negatively correlated with one another. If the mobility measures are negatively associated with zero-sum thinking, as we find, then examining one measure while omitting others will lead to downward bias in the magnitude of the estimated effects.

To illustrate this fact, we report estimates in Appendix Table A11 where the measures are included in separate regressions. We find that the estimated effects in Appendix Table A11 are all substantially smaller in magnitude than in Table 3, consistent with a downward bias when the experiences of the full ancestry are not taken into account.

We highlight this fact for two reasons. First, the estimates we report here might still be downward biased. We only measure mobility back to the respondent's grandparents' lifetime. However, if the mobility experienced by the respondent's great-grandparents or great-great-grandparents also matters for their zero-sum thinking, then the fact that these measures are not included may bias the estimated coefficients for the mobility measures that we do include in

the equation. Second, many studies have examined the experiences of a respondent and shown that they affect various cultural traits. Because of data constraints, it is not possible to examine the analogous experiences of previous generations. The findings here show that these are likely important. This highlights the contribution of our data collection effort, which includes detailed ancestral measures.

Finally, we confirm that the results are similar when we consider only within-U.S. mobility. That is, we drop individuals whose relative income (in adulthood or childhood) refers to a country other than the U.S., and similarly, whose father or paternal grandfather's relative income refers to a non-U.S. country. These results are in Appendix Table A12.

## **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 multiple generations, inferring immigration by looking at location of birth. For example, if a person resides in the U.S. (which is a requirement of our survey) but was born outside of the U.S., we infer that they are an immigrant. Similarly, if a person was born in the U.S., but at least one of their parents was born outside of the U.S., then we infer their parent(s) immigrated. If an individual was born in the U.S., and their parent was born in the U.S. but at least one grandparent was born outside of the U.S., then we infer that the grandparent(s) immigrated. In this way, we are able to observe immigration into the United States over three generations.

### *Direct effects*

First, in Figure 15, we plot the average zero-sum index for first, second, and third-generation immigrants, as well as for all other respondents. Respondents who were born outside the U.S. but immigrated exhibit the least zero-sum thinking. Second and third-generation immigrants – U.S.-born individuals whose parents or grandparents were born outside the U.S. – show more zero-sum thinking, but still less than other respondents, whose families have lived in the U.S. for more than three generations. Across generations, a family history of (recent) immigration is associated with less zero-sum thinking.

Next, in Table 4, we report estimates of equation (2) with immigration as the independent variable of interest. In all specifications, we include the measure of whether the respondent



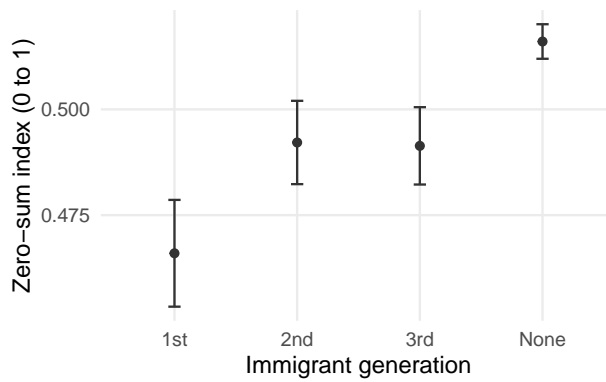


Figure 15: Zero-Sum Thinking and Immigration

Notes: Vertical bars are 95% confidence intervals.

themselves is an immigrant, defined as whether they were born outside of the U.S. We also include an indicator that equals one if at least one parent was an immigrant and an indicator that equals one if at least one grandparent was an immigrant.

We find that an individual’s own experience matters. If a respondent was born outside the U.S., then they tend to have a less zero-sum view of the world. This is consistent with the idea that immigration to a high-income country is a life-changing event that makes the individual better off with no obvious detriment to others. We expect that this would make a person’s views less zero-sum.

We find that the estimate of  $\beta_i$  ranges from  $-0.041$  to  $-0.047$ , which is equal to about 20% of the standard deviation and 9% of the mean. We expect the effect of parents’ immigration to be smaller than one’s own experience since it is unlikely that any effects are then perfectly transmitted to children. This is exactly what we find. In all specifications, the estimated effect of the parents,  $\beta_p$ , is negative and significant and about 70 to 85% the size of the individual’s own effect. We see further decay of effects when we examine the grandparents’ immigration experience. The estimated effect,  $\beta_{gp}$ , is negative and range from  $-0.003$  to  $-0.007$ , which is about 15% of the magnitude of the parents’ effect and 10% of the own effect. In all, we find strong evidence that ancestral migration is associated with less zero-sum thinking. The effects of living in a county with historical migration seem to decay over time, which could be consistent with changes in the economic conditions of these counties or changes in the pattern of more recent immigration.

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

Table 4: Zero-Sum Thinking and Immigration

	Dependent variable: Zero-sum index (0 to 1)		
	(1)	(2)	(3)
Respondent immigrated	-0.0460*** (0.0068)	-0.0472*** (0.0070)	-0.0414*** (0.0079)
Parent immigrated	-0.0371*** (0.0057)	-0.0385*** (0.0058)	-0.0351*** (0.0064)
Grandparent immigrated	-0.0074 (0.0051)	-0.0069 (0.0052)	-0.0030 (0.0052)
Demographic controls	✓	✓	✓
Wave fixed effects	✓	✓	✓
State fixed effects		✓	✓
Race fixed effects			✓
Observations	13,251	13,251	13,251
R <sup>2</sup>	0.052	0.059	0.069
Dependent variable mean	0.504	0.504	0.504
Dependent variable std. dev.	0.208	0.208	0.208

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

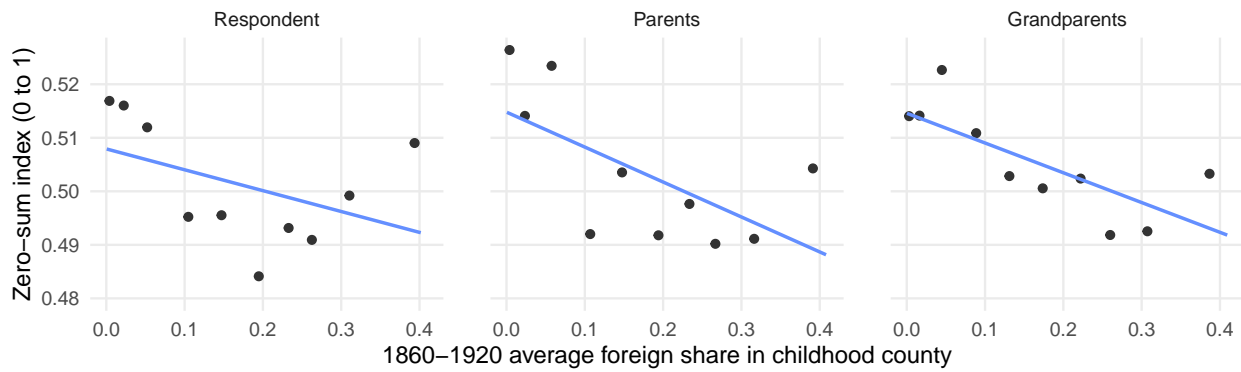


Figure 16: Relationships Between County Foreign Share and Zero-Sum Thinking

Notes: Binned scatter plots show the relationship between an index of the respondent's zero-sum thinking and the 1860-1920 average foreign 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.

U.S. born, cannot be immigrants. If immigration leads to less zero-sum thinking, this negative relationship between the measures will lead to estimates that are biased towards zero. To be as thorough as possible, we also report specifications with the measures included one at a time in Appendix Table A13. We obtain similar estimates, although, as expected and as was the case for mobility, the point estimates are smaller in magnitude.

#### *Indirect effects*

We next use experience measures that reflect the respondent and their ancestors' environments. Rather than measuring whether the respondent, their parents, and their grandparents were first-generation immigrants, we consider the extent to which the counties where the respondent and their ancestors grew up had populations of first-generation immigrants, measured as the share of people who were foreign-born in each county.

We begin by focusing 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.

Figure 16 shows the bivariate relationship between average 1860-1920 foreign share of the county in which the respondents, their parents, or their grandparents were raised and the zero-sum measure of the respondent. For all three, there is evidence of a negative relationship between historical immigration and zero-sum thinking. The relationship is stronger for the county of the

Table 5: Zero-Sum Thinking and County Foreign Share 1860-1920

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county foreign share	-0.0206 (0.0241)	0.0060 (0.0220)	0.0039 (0.0219)						
Parents' counties foreign share				-0.0637*** (0.0221)	-0.0640*** (0.0207)	-0.0460** (0.0204)			
Grandparents' counties foreign share							-0.0751*** (0.0211)	-0.0834*** (0.0219)	-0.0551** (0.0221)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	12,566	12,566	12,566	11,243	11,243	11,243	8,766	8,766	8,766
R <sup>2</sup>	0.039	0.046	0.057	0.045	0.052	0.064	0.047	0.057	0.068
Num. clusters	1,735	1,735	1,735	5,824	5,824	5,824	6,731	6,731	6,731
Dependent variable mean	0.501	0.501	0.501	0.503	0.503	0.503	0.506	0.506	0.506
Dependent variable std. dev.	0.202	0.202	0.202	0.204	0.204	0.204	0.207	0.207	0.207

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

parents and grandparents than for the county of the respondent.

Estimates of equation (2), with the historical immigration measures as the independent variables of interest are reported in Table 5. Columns 1–3 report estimates where the independent variable of interest is the intensity of immigrant settlement during the Age of Mass Migration in the county where the respondent grew up. Columns 4–6 report estimates for the same measure, averaged over the counties where the respondent's father and mother grew up, and columns 7–8 report estimates for the average of the respondent's grandparents' counties.

Consistent with the bivariate relationship, OLS estimates also show a connection between zero-sum thinking and the share of immigrants during the Age of Mass Migration for the respondent's parents' and grandparents' locations, but not for their own location. The estimated coefficients for the respondent's ancestors are negative and significant, suggesting that a larger presence of immigrants is associated with less zero-sum thinking. These findings dovetail nicely with the finding that having immigrant ancestors is associated with less zero-sum thinking, and are consistent with immigrant presence in a county being associated with less zero-sum thinking among others in the county.

We check the sensitivity of these findings by examining the historical immigrant settlement measure for the respondent's father and paternal grandfather, rather than both parents and all grandparents. The estimates, which are reported in Appendix Table A14, are very similar. We also

Table 6: Zero-Sum Thinking and County Foreign Share 1860-1920, With Immigrant Generation Controls

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county foreign share	0.0039 (0.0219)	0.0096 (0.0224)	0.0149 (0.0227)						
Parents' counties foreign share				-0.0460** (0.0204)	-0.0416** (0.0207)	-0.0442** (0.0225)			
Grandparents' counties foreign share							-0.0551** (0.0221)	-0.0545** (0.0221)	-0.0532** (0.0225)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
2nd generation immigrant		✓	✓		✓	✓		✓	✓
3rd generation immigrant			✓			✓			✓
Observations	12,566	12,508	11,553	11,243	11,241	10,518	8,766	8,764	8,764
R <sup>2</sup>	0.057	0.059	0.060	0.064	0.065	0.066	0.068	0.068	0.068
Num. clusters	1,735	1,735	1,696	5,824	5,824	5,579	6,731	6,730	6,730
Dependent variable mean	0.501	0.501	0.499	0.503	0.503	0.501	0.506	0.505	0.505
Dependent variable std. dev.	0.202	0.202	0.203	0.204	0.204	0.205	0.207	0.207	0.207

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

check the robustness of the estimates to using 1920, the last decade of the Age of Mass Migration, rather than an average over all decades. Immigrant settlement during this period is arguably a good measure of the immigrant flow during the Age of Mass Migration. Appendix Table A16 shows that we obtain very similar estimates in this case.

We next turn to a better understanding of the mechanisms. Since immigrants often choose to live where there are other immigrants, it is possible that our findings reflect direct transmission of the effects of ancestral immigration to the respondent. To examine this possibility and better disentangle the different transmission mechanisms, we estimate the specifications including the measures of whether the respondent's own ancestors were immigrants. The estimates are reported in Table 6.<sup>9</sup> We find that our estimated effects of ancestors' locations are very similar when we control for whether the respondent's ancestors were immigrants themselves. The estimates are almost the same magnitude and remain statistically significant. This suggests that the relationship is not just because the immigrant share in a county is correlated with the respondent's ancestors being immigrants themselves. This is consistent with an indirect transmission of non-zero-sum

<sup>9</sup>Estimates for the specification where we consider the father and paternal grandfathers specifically are reported in Appendix Table A15.

beliefs from immigrants to those around them, and the subsequent direct transmission of those values down to the respondent.

### ***C. Enslavement***

#### *Direct effects*

The final factor that we consider – a particularly important one in the U.S. historical context – is enslavement. Because of its close ties with race, we begin by examining the relationship between race and zero-sum thinking. We thus estimate a variant of equation (2) where the independent variables of interest are indicator variables for the race of the respondent. The estimated coefficients are reported in Table 7, 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; Asian/Asian American respondents are less zero-sum than white respondents. Indigenous people and anyone listing another race are about equally as zero-sum as white respondents.

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

The data show that Black Americans have a much more zero-sum view of the world. A natural explanation for this is that the ancestors of Black Americans were often enslaved individuals. Slavery was a relationship between enslavers and enslaved people that was fully zero-sum. Therefore, we expect a history of coercive relationships of this nature to be associated with more zero-sum views today.<sup>10</sup>

To further understand this issue, 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. The forms

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<sup>10</sup>We also see that Asians and Asian Americans tend to be much less zero-sum. This is consistent with 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 7: Zero-Sum Thinking and Race

	Dependent variable: Zero-sum index (0 to 1)				
	(1)	(2)	(3)	(4)	(5)
African American/Black	0.0695*** (0.0056)	0.0669*** (0.0058)	0.0666*** (0.0058)	0.0629*** (0.0058)	0.0613*** (0.0074)
American Indian or Alaska Native	0.0074 (0.0231)	0.0049 (0.0232)	0.0047 (0.0230)	0.0017 (0.0229)	0.0290 (0.0276)
Asian/Asian American	-0.0219*** (0.0074)	-0.0215*** (0.0078)	-0.0191** (0.0078)	-0.0188** (0.0078)	-0.0222** (0.0112)
Hispanic/Latino	0.0058 (0.0062)	0.0045 (0.0065)	0.0047 (0.0065)	0.0027 (0.0065)	-0.0048 (0.0085)
Native Hawaiian or Other Pacific Islander	-0.0586* (0.0343)	-0.0535 (0.0359)	-0.0516 (0.0362)	-0.0558 (0.0363)	-0.0396 (0.0408)
Other race	-0.0078 (0.0114)	-0.0079 (0.0114)	-0.0096 (0.0113)	-0.0112 (0.0114)	-0.0146 (0.0134)
Demographic controls	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓	✓
Education fixed effects			✓	✓	✓
Household income fixed effects				✓	✓
Birth town fixed effects					✓
Observations	14,432	14,432	14,432	14,430	13,382
R <sup>2</sup>	0.059	0.063	0.068	0.070	0.283
Dependent variable mean	0.506	0.506	0.506	0.506	0.509
Dependent variable std. dev.	0.207	0.207	0.207	0.207	0.206

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

Table 8: Zero-Sum Thinking and Ancestral Enslavement

<i>Mean enslaved indicator</i>	Dependent variable: Zero-sum index (0 to 1)							
	Full sample		Black only		Latino, Indig., Asian, other		White only	
	0.091		0.374		0.072		0.051	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Enslaved ancestor indicator	0.0860*** (0.0071)	0.0867*** (0.0071)	0.0098 (0.0101)	0.0119 (0.0102)	0.0633*** (0.0167)	0.0639*** (0.0170)	0.1554*** (0.0112)	0.1563*** (0.0112)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
State fixed effects		✓		✓		✓		✓
Observations	14,432	14,432	1,640	1,640	2,746	2,746	10,046	10,046
R <sup>2</sup>	0.071	0.076	0.016	0.046	0.033	0.049	0.092	0.099
Dependent variable mean	0.506	0.506	0.566	0.566	0.498	0.498	0.498	0.498
Dependent variable std. dev.	0.207	0.207	0.195	0.195	0.204	0.204	0.208	0.208

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

of enslavement that respondents considered are broader than chattel slavery and include imprisonment and internment during war, concentration camps during the Holocaust, and forced reservation of Indigenous peoples. We estimate a version of equation (2) 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 Table 8. To account for the racial differences described previously, we include race fixed effects. The even-numbered columns also include state fixed effects. Columns 1 and 2 report estimates for the full sample. We see a strong positive and highly significant relationship. In columns 3–8, we report estimates for three groups: (1) Black individuals only, (2) white individuals only, and (3) Hispanic/Latino, Indigenous, Asian/Asian American, and individuals of another race. We estimate positive and significant coefficients for all three groups.

Our findings show an interesting pattern: Black Americans appear to have the highest levels of zero-sum thinking and a possible explanation for this is the history of enslavement experienced by this group. However, when we examine the effect of this factor, we find that the marginal effect of enslavement is highest for groups other than Black Americans. Although there are multiple explanations for this, one is that slavery led to pervasive racism and institutional biases such that all Black Americans have been affected by the United States’s history of enslavement – not just those whose ancestors were directly enslaved. We discuss evidence supporting this interpretation



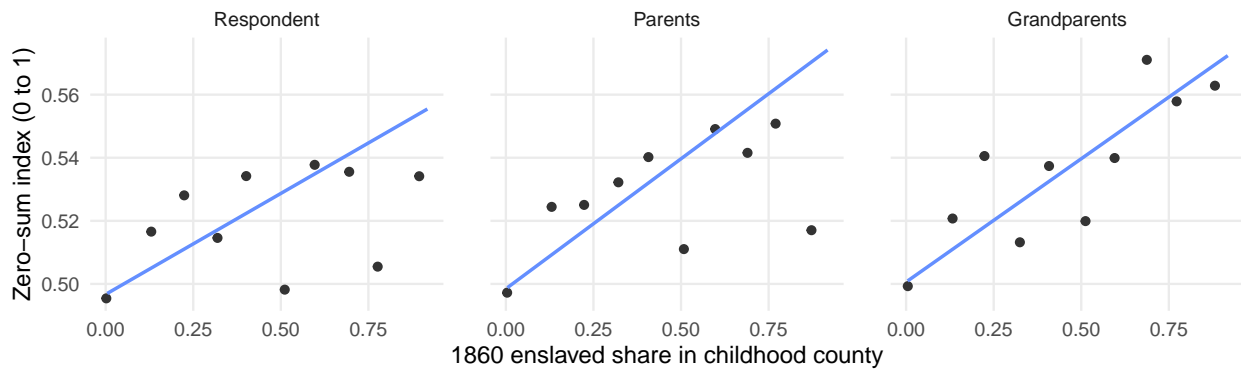


Figure 17: Relationships Between County Enslaved Share and Zero-Sum Thinking

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

below.

### *Indirect effects*

We also examine the effects of slavery beyond the direct effect of descending from ancestors who were enslaved. Specifically, we ask whether the environment in which a respondent's ancestors grew up also matters. Rather than measuring whether the respondent's ancestors were enslaved, 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, as measured by the share of the total population that was enslaved in 1860. In doing this, we focus specifically on enslavement of African Americans.

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

Table 9 confirms these results, reporting estimates of the association between the 1860 enslaved share in the county where the respondent grew up and their degree of zero-sum thinking today. Column 1 reports estimates with only the demographic controls and survey wave fixed effects. We then add race fixed effects (in column 2), state of residence fixed effects (in column 3), and an indicator for whether any of the respondent's ancestors were themselves enslaved (in column 4). We find that growing up in a county that had a larger share of enslaved people tends to be asso-

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

	Dependent variable: Zero-sum index (0 to 1)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Respondent's county enslaved share	0.0514*** (0.0129)	0.0582*** (0.0157)	0.0372** (0.0156)	0.0377** (0.0156)								
Parents' counties enslaved share					0.0784*** (0.0127)	0.0901*** (0.0148)	0.0484*** (0.0153)	0.0463*** (0.0153)				
Grandparents' counties enslaved share									0.0781*** (0.0140)	0.0931*** (0.0158)	0.0411** (0.0169)	0.0328* (0.0169)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓			✓	✓
Enslaved ancestor				✓				✓				✓
Observations	13,118	13,118	13,118	13,118	11,579	11,579	11,579	11,579	9,003	9,003	9,003	9,003
R <sup>2</sup>	0.040	0.046	0.057	0.062	0.048	0.056	0.065	0.073	0.050	0.059	0.069	0.082
Num. clusters	1,836	1,836	1,836	1,836	5,972	5,972	5,972	5,972	6,899	6,899	6,899	6,899
Dependent variable mean	0.501	0.501	0.501	0.501	0.504	0.504	0.504	0.504	0.507	0.507	0.507	0.507
Dependent variable std. dev.	0.202	0.202	0.202	0.202	0.204	0.204	0.204	0.204	0.208	0.208	0.208	0.208

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

ciated with more zero-sum views today. All estimates are positive and significant at conventional levels. We also report similar estimates measuring the historical prevalence of enslavement in the counties where the respondent's parents grew up (column 5–8) and their grandparents grew up (columns 9–12). We observe the same pattern for the respondent's ancestors. The share of enslaved people in 1860 in the counties where the respondent's parents and grandparents grew up tends to be positively correlated with zero-sum thinking today.

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 A17, we obtain very similar estimates.

The results provide evidence that living in places where slavery was more prevalent is associated with zero-sum thinking. We next ask whether the history of enslavement affected zero-sum values in the 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 was spread outside of the South during a large 'white' migration from 1900–1940 (Bazzi et al., 2023b). Southern enslavement may have influenced zero-sum thinking outside of the South through the 'Great Migration' of millions of Black individuals from the South in the 20th Century (Derenoncourt, 2022).

Motivated by these episodes of migration, we ask whether a respondent's zero-sum thinking is influenced by the extent to which the county they, their parents, or grandparents grew up

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

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county share of southern whites in 1900-1940	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)						
Parents' county average share of southern whites in 1900-1940				0.002** (0.001)	0.003*** (0.001)	0.002*** (0.001)			
Grandparents' county average share of southern whites in 1900-1940							0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	11040	11039	11039	10238	10238	10238	7864	7864	7864
R <sup>2</sup>	0.062	0.068	0.077	0.071	0.080	0.088	0.076	0.087	0.095
Num. clusters	1163	1163	1163	4782	4782	4782	5674	5674	5674
Dependent variable mean	0.502	0.502	0.502	0.503	0.503	0.503	0.506	0.506	0.506
Dependent variable std. dev.	0.205	0.205	0.205	0.209	0.209	0.209	0.214	0.214	0.214

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

in received immigrants from the U.S. South from 1900–1940. We rely on variables constructed by Bazzi et al. (2023b) based on complete-count Censuses, namely the share of non-Southern counties' populations that were born in the South and is white ('Southern whites') or Black ('Southern Blacks').

Table 10 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 degree of zero-sum thinking today (columns 1–3). Analogous relationships are also reported for the counties where the respondent's parents (column 4–6) and grandparents (columns 7–9) were raised. We also report the estimated effects of the share of the population that were Black migrants from the South from 1900–1940 in Table 11.

Bazzi et al. (2023b) implement a shift-share an instrument for both measures of Southern migrants. As is now standard in the literature (e.g., Boustan, 2010, Deroncourt, 2022), the instrument is constructed by interacting initial shares of Southern migrants in non-Southern counties with predicted aggregate outflows from Southern counties. Table 12 and 13 report IV estimates using the shift-share instruments constructed by Bazzi et al. (2023b).

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. This is true whether the migrants were white or Black individuals, although the estimated relationship appears to be stronger for the measures of migrants from the South who were Black.

Finally, we explicitly examine the role 'Southern' or 'Confederate' culture across counties.

Table 11: Zero-Sum Thinking and Growing Up in Counties With In-Migration from the U.S. South: OLS Estimates for Black Migrants

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county share of southern blacks in 1900-1940	0.011*** (0.003)	0.010*** (0.003)	0.008** (0.003)						
Parents' county average share of southern blacks in 1900-1940				0.007*** (0.002)	0.006*** (0.002)	0.004* (0.002)			
Grandparents' county average share of southern blacks in 1900-1940							0.006*** (0.002)	0.005** (0.002)	0.003 (0.002)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	11040	11039	11039	10238	10238	10238	7864	7864	7864
R <sup>2</sup>	0.067	0.071	0.079	0.073	0.080	0.088	0.075	0.086	0.093
Num. clusters	1163	1163	1163	4782	4782	4782	5674	5674	5674
Dependent variable mean	0.502	0.502	0.502	0.503	0.503	0.503	0.506	0.506	0.506
Dependent variable std. dev.	0.205	0.205	0.205	0.209	0.209	0.209	0.214	0.214	0.214

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

Table 12: Zero-Sum Thinking and Growing Up in Counties With In-Migration from the U.S. South: IV Estimates for White Migrants

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county share of southern whites in 1900-1940	0.001 (0.001)	0.002** (0.001)	0.002** (0.001)						
Parents' county average share of southern whites in 1900-1940				0.003** (0.001)	0.004*** (0.001)	0.004*** (0.001)			
Grandparents' county average share of southern whites in 1900-1940							0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	11040	11039	11039	10238	10238	10238	7864	7864	7864
R <sup>2</sup>	0.051	0.040	0.037	0.059	0.047	0.042	0.064	0.049	0.043
KP-F Stat	173.855	218.360	221.349	400.087	532.799	527.277	1117.655	1004.370	966.223
Num. clusters	1163	1163	1163	4782	4782	4782	5674	5674	5674
Dependent variable mean	0.502	0.502	0.502	0.503	0.503	0.503	0.506	0.506	0.506
Dependent variable std. dev.	0.205	0.205	0.205	0.209	0.209	0.209	0.214	0.214	0.214

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

Table 13: Zero-Sum Thinking and Growing Up in Counties With In-Migration from the U.S. South: IV Estimates for Black Migrants

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county share of southern blacks in 1900-1940	0.013*** (0.004)	0.011*** (0.003)	0.009*** (0.003)						
Parents' county average share of southern blacks in 1900-1940				0.009** (0.004)	0.007** (0.003)	0.004 (0.003)			
Grandparents' county average share of southern blacks in 1900-1940							0.012*** (0.004)	0.011*** (0.003)	0.008** (0.003)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	11040	11039	11039	10238	10238	10238	7864	7864	7864
R <sup>2</sup>	0.056	0.044	0.039	0.060	0.048	0.042	0.063	0.048	0.041
KP-F Stat	18.845	46.905	46.894	72.072	140.904	142.261	276.172	369.924	361.411
Num. clusters	1163	1163	1163	4782	4782	4782	5674	5674	5674
Dependent variable mean	0.502	0.502	0.502	0.503	0.503	0.503	0.506	0.506	0.506
Dependent variable std. dev.	0.205	0.205	0.205	0.209	0.209	0.209	0.214	0.214	0.214

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

To do this we use the 'Confederate Culture Index,' constructed by Bazzi et al. (2023a), which combines information on whether, in the early 1900s, a county had Confederate memorials, a KKK chapter, a United Daughters of the Confederacy chapter, and recorded lynching of Black individuals.<sup>11</sup> Table 14 shows a positive link between Confederate culture and zero-sum thinking. These results are for all counties but the estimates are similar if we restrict to non-Southern countries.

The existence of spillovers from the South to other parts of the country, through migration and the spreading of Confederate culture, is important for understanding why the estimated correlation between enslavement and zero-sum thinking is small 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 still been influenced by the practices in the South through these spillover effects. These could be due to the coercion and discrimination, arising in part from the migration of Southern whites and the rise of Confederate values, as well as through the interactions with recent Black migrants from the South, who may have also held perceptions that were more zero-sum.

<sup>11</sup>The coverage period varies slightly by component. For the UCD chapter it is 1900-1920; for the KKK chapter it is 1915-1940; for lynchings it is 1882-1941; and for Confederate monuments, it is any mention until 2016.

Table 14: Zero-Sum Thinking and Growing Up in Counties With Stronger Confederate Culture: OLS Estimates

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county confederate culture index (0 to 4)	0.008*** (0.002)	0.008*** (0.002)	0.007*** (0.002)						
Parents's county confederate culture index (0 to 4)				0.012*** (0.002)	0.012*** (0.002)	0.009*** (0.002)			
Grandparents's county confederate culture index (0 to 4)							0.015*** (0.002)	0.015*** (0.002)	0.012*** (0.002)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	15236	15235	15235	13522	13522	13522	10548	10548	10548
R <sup>2</sup>	0.061	0.064	0.072	0.074	0.077	0.085	0.076	0.081	0.088
Num. clusters	1897	1897	1897	6602	6602	6602	7798	7798	7798
Dependent variable mean	0.509	0.509	0.509	0.513	0.513	0.513	0.515	0.515	0.515
Dependent variable std. dev.	0.207	0.207	0.207	0.210	0.210	0.210	0.213	0.213	0.213

Notes: The table reports OLS estimates where the unit of observation is an individual. The "Confederate Culture Index" is a measure of the presence of confederate culture, created by Bazzi et al. (2023a), that takes on integer values from 0 to 4. The sample includes all counties. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for parents and grandparents. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the relevant county or counties and are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

#### D. Zero-sum origins and other political puzzles

Having examined evidence on the potential origins in contemporary differences in zero-sum thinking, we now consider how this deeper understanding helps us to better understand contemporary political puzzles.

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

We first consider why, all else equal, younger cohorts tend to have greater support for government redistribution. This is potentially puzzling if one considers that the elderly tend to be recipients of redistribution, especially relative to the young. Our focus on zero-sum thinking suggests that this is potentially explained by the fact that younger individuals tend to view the world in more zero-sum terms and therefore support government programs that redistribute resources. However, this then raises the question of why younger individuals have a zero-sum view of the world.

To see the answer to this, recall that better economic conditions tend to be associated with less zero-sum thinking. Motivated by this, we undertake the simple exercise of comparing the economic growth across birth cohorts and the average level of zero-sum thinking of those cohorts. Because the economic performance of the top 1% or even 0.1% skews measures of mean growth, we use the pre-tax income growth of the bottom 50% of the U.S. population. The growth over the first 20 years of life for an individual born in a particular cohort is shown in Figure 18. We

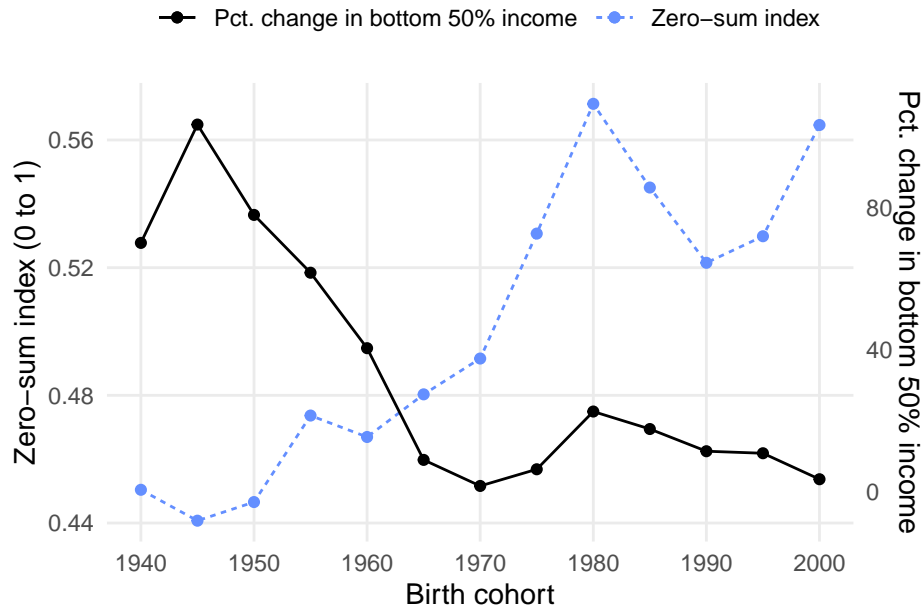


Figure 18: Economic Growth and Zero-Sum Thinking, By Birth Cohort

*Notes:* The black, solid line is the percentage change in bottom 50% income for the first 20 years of an individual’s life, averaged over five-year bins. Data is 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.

see a clear and well-known pattern: Prior to 1970, there was a period of prosperity and economic growth, with decadal growth rates ranging from 12 to 88%. Since 1970, there has been a significant decline in growth, with decadal growth ranging from –5 to 14%.

This pattern can be compared to the cross-cohort variation in zero-sum thinking that we observe in the data, also shown in Figure 18. There appear to be two distinct groups. Individuals born after about 1975 (younger than about 45) have a much higher measure of zero-sum thinking that is close to 0.55 on average. By contrast, for individuals born before 1970 (older than about 50), the measure is closer to 0.45. Thus, the pattern of zero-sum thinking that we observe across cohorts aligns remarkably well with the temporal pattern in aggregate growth data.

Given this, the answer to the question of why younger individuals today are more zero-sum is that they were born and raised in economic conditions that featured less growth and more stagnation – and thus were more likely to be effectively zero-sum environments.

One concern with the relationship in Figure 18 is that it is impossible to disprove that the pattern in zero-sum thinking is not driven by age effects, rather than varying economic conditions for different cohorts. To make progress on this, we examine the link between zero-sum thinking and economic conditions during the first 20-years of a person’s life using multiple countries from

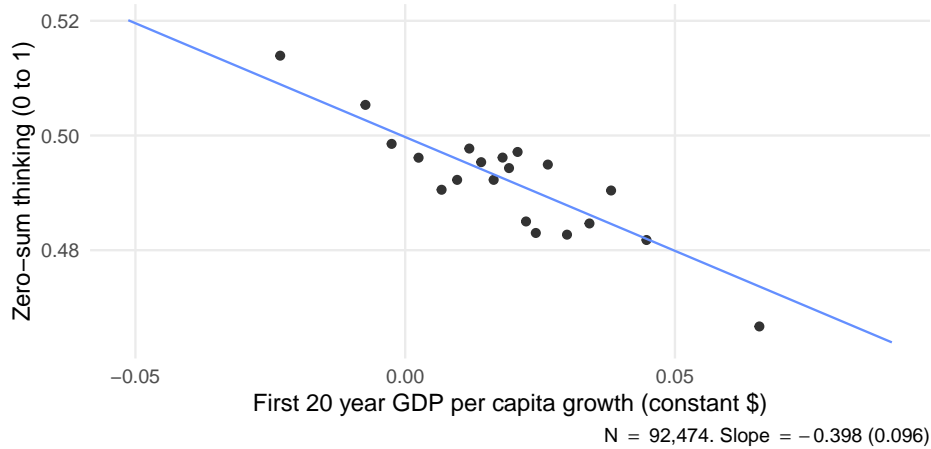


Figure 19: Relationship Between GDP Growth in Childhood and Zero-Sum Thinking

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

the World Values Survey. Specifically, we estimate the following equation:

$$\text{Zero Sum}_{i,c,v,t} = \alpha_{c,v} + \alpha_t + \beta \text{Growth}_{c,t} + \mathbf{X}_{i,c,v,t}\mathbf{\Gamma} + \varepsilon_{i,c,t} \quad (3)$$

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  $\mathbf{X}_{i,c,t}$  includes the following controls: individual  $i$ ’s age and age squared, gender, and their interaction.

Because we are examining multiple countries, each with different growth experiences, we are able to separately estimate age effects from effects due to economic conditions early in one’s life. Figure 19 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.

## 5. Conclusion

We have examined the causes and consequences of a zero-sum psychology, defined as the extent to which one presumes, either subconsciously or consciously, that gains for one person or group must come at the expense of others. Our analysis relies on a survey that we implemented



among approximately 15,000 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. This includes direct policies like redistribution through taxation, but also less direct policies like universal income and affirmative action for women and Black Americans. Zero-sum thinking is also associated with political alignment with the Democratic Party rather than the Republican Party.

We demonstrate the importance of understanding zero-sum thinking by showing how it is linked empirically to important political crises recently experienced in the United States. Specifically, we find that individuals who view the world in zero-sum terms are more likely to believe that the conspiracy theory QAnon holds some truth for U.S. politics. This is explained by the fact that QAnon theories are almost exclusively narratives that are zero-sum in nature, centering around a group of wealthy elites who are enriching themselves at the expense of less wealthy individuals across the world. We also find that zero-sum thinking is linked with greater empathy and understanding for those involved in the January 6, 2021 attack on the U.S. Capitol Building, an act that is more justifiable and seen as less harmful if one presumes the world is zero-sum (rather than negative sum). Both correlations are found even conditioning on fine-grained political affiliation (and strength) fixed effects. Importantly, they are also found if one looks at individuals within the same political party.

Additional analyses show that the link between these outcomes and a zero-sum mindset is not because zero-sum thinking is correlated with other commonly identified cultural, political and psychological traits, such as beliefs in the link between hard work and success, moral universalism, perceptions of mobility, or beliefs in the importance of tradition.

Having examined the relationship between zero-sum thinking and one's views about politics, policy, and social issues, we turn to the roots of zero-sum thinking. We examine three factors which are key when thinking about the United States: economic mobility, immigration, and enslavement. We find each to be an important determinant of zero-sum thinking. In addition, we find that zero-sum thinking can be traced to the experiences of an individual's ancestors (parents,

grandparents, and great-grandparents). Respondents view the world as less zero-sum if they, their parents, and their grandparents experienced more upward mobility during their lifetimes. Individuals tend to be less zero-sum if they, their parents, or their grandparents immigrated to the United States. In both cases, we find that the effects are larger for more recent generations.

The last factor that we consider is a history of enslavement. Black individuals exhibit more zero-sum thinking. In addition, individuals who report having ancestors who were enslaved are also more zero-sum, including individuals who have ancestors who were from Africa and enslaved in the U.S. South, but also ancestors who were interned in the U.S. during World War II, imprisoned during the Holocaust in Europe, were forcibly removed from Indigenous lands in the U.S., or migrated to the U.S. as indentured laborers.

Overall, our findings underscore the importance of measuring psychological traits and how they are transmitted intergenerationally in order to better understand the non-partisan roots of important policy divides.

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## Online Appendix (Not for Publication)

### Appendix A. Finer Details of the Survey

#### *Ancestry Survey Questions*

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

Age questions:

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

Location questions:

- Did *<ancestor>* primarily grow up (age 7-17) in the United States?
- *If ancestor didn't grow up in the U.S.:*
  - In what country did *<ancestor>* primarily grow up?
- *If ancestor grew up in the U.S.:*
  - In which state did *<ancestor>* primarily grow up?

- In which town did <ancestor> primarily grow up? If he/she grew up in multiple places, select the location where he/she spent most of his time.

Other questions:

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

### *Survey statistics*

Table A1: Attrition

Wave	Started survey	Completed	Did not consent	Quota full	Dropped mid-survey
1	3,960	0.75	0.06	0.03	0.17
2	5,204	0.57	0.06	0.22	0.15
3	4,187	0.71	0.08	0.03	0.18
4	5,675	0.50	0.13	0.19	0.18
5	6,081	0.50	0.14	0.16	0.21
Overall	25,107	0.59	0.10	0.14	0.18

*Notes:* The table shows the number of people who started the survey by wave, along with the proportions of those who completed the survey and who did not complete it for various reasons: those who did not consent to the survey, those who were screened out due to demographic quotas, and those who started the main survey but did not finish.



Table A2: Predictors of Attrition

	Dependent variable: Completed survey (1)
Constant	0.7237*** (0.0483)
Age 30-39	-0.0293*** (0.0084)
Age 40-49	-0.0343*** (0.0088)
Age 50-59	-0.0413*** (0.0086)
Age 60+	-0.0244*** (0.0084)
Missing age	0.2207 (0.1664)
Male	0.0163*** (0.0053)
Other gender	0.0470 (0.0383)
American Indian/Alaska Native	0.0141 (0.0359)
Asian/Asian American	0.0821*** (0.0126)
White	0.0489*** (0.0097)
Hispanic/Latino	0.0464*** (0.0124)
Native Hawaiian/Pacific Islander	-0.0478 (0.0607)
Other race	0.0082 (0.0204)
Missing race	-0.0060 (0.0102)
\$15,000–\$24,999	0.0272** (0.0134)
\$25,000–\$39,999	0.0401*** (0.0122)
\$40,000–\$54,999	0.0643*** (0.0123)
\$55,000–\$74,999	0.0530*** (0.0121)
\$75,000–\$99,999	0.0599*** (0.0123)
\$100,000–\$149,999	0.0753*** (0.0116)
\$150,000+	0.0881*** (0.0126)
Missing income	-0.1602 (0.1662)
Some high school	-0.0242 (0.0508)
High school degree/GED	0.0153 (0.0470)
Some college	0.0327 (0.0470)
2-year college degree	0.0519 (0.0473)
4-year college degree	0.0724 (0.0468)
Master's degree, M.B.A.	0.0856* (0.0471)
Ph.D., J.D., M.D.	0.0929* (0.0480)
Reached education question but did not answer	0.0338 (0.0483)
Did not reach education question	0.0444 (0.0482)
Moderate Republican	0.0261*** (0.0100)
Independent	0.0038 (0.0093)
Moderate Democrat	0.0060 (0.0100)
Strong Democrat	0.0293*** (0.0096)
Other party	-0.0490** (0.0191)
Reached party question but did not answer	-0.2322 (0.1949)
Did not reach party question	-0.7858*** (0.0142)
Wave 2	-0.0141* (0.0076)
Wave 3	-0.0192** (0.0079)
Wave 4	-0.0343*** (0.0084)
Wave 5	-0.0753*** (0.0082)
Observations	19,261
R <sup>2</sup>	0.323
Dependent variable mean	0.765

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

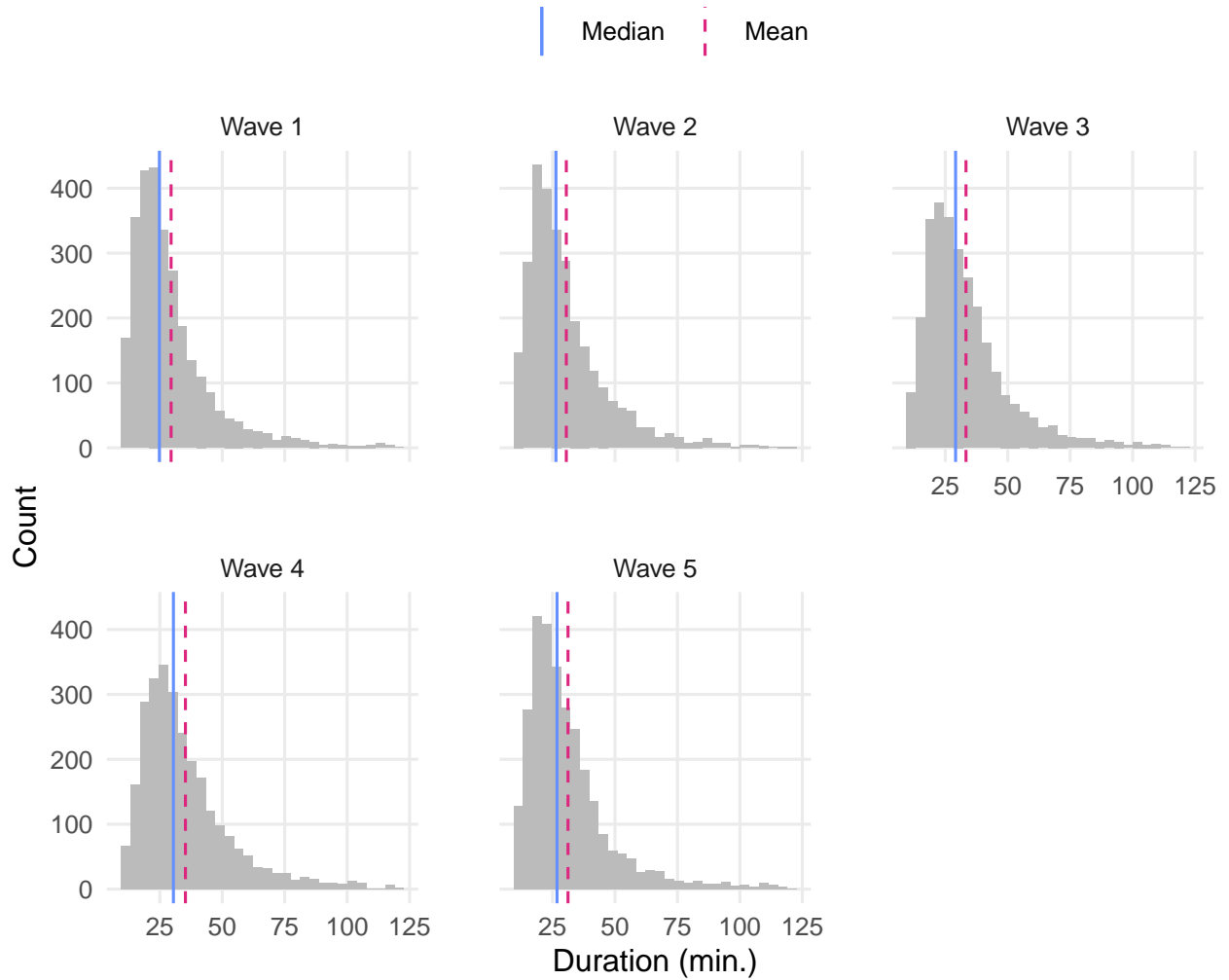


Figure A1: Survey Duration by Wave

*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.

## Appendix B. Appendix Tables and Figures

Table A3: Correlations Among Zero-Sum Questions

	Citizenship (+)	Trade (+)	Income (+)	Wealth of rich taken from others (+)	Wealth can grow so there's enough (-)
Ethnic (+)	0.32	0.52	0.56	0.30	-0.18
Citizenship (+)		0.35	0.27	-0.05	0.01
Trade (+)			0.45	0.18	-0.12
Income (+)				0.44	-0.24
Wealth of rich taken from others (+)					-0.28

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

Table A4: Correlations Among Location Questions

	Father	Mother	Paternal grandfather	Paternal grandmother	Maternal grandfather	Maternal grandmother
Respondent	0.50	0.50	0.43	0.42	0.40	0.40
Father		0.57	0.73	0.70	0.48	0.47
Mother			0.50	0.52	0.70	0.69
Paternal grandfather				0.77	0.48	0.46
Paternal grandmother					0.50	0.49
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.

## In politics, what do you consider yourself?

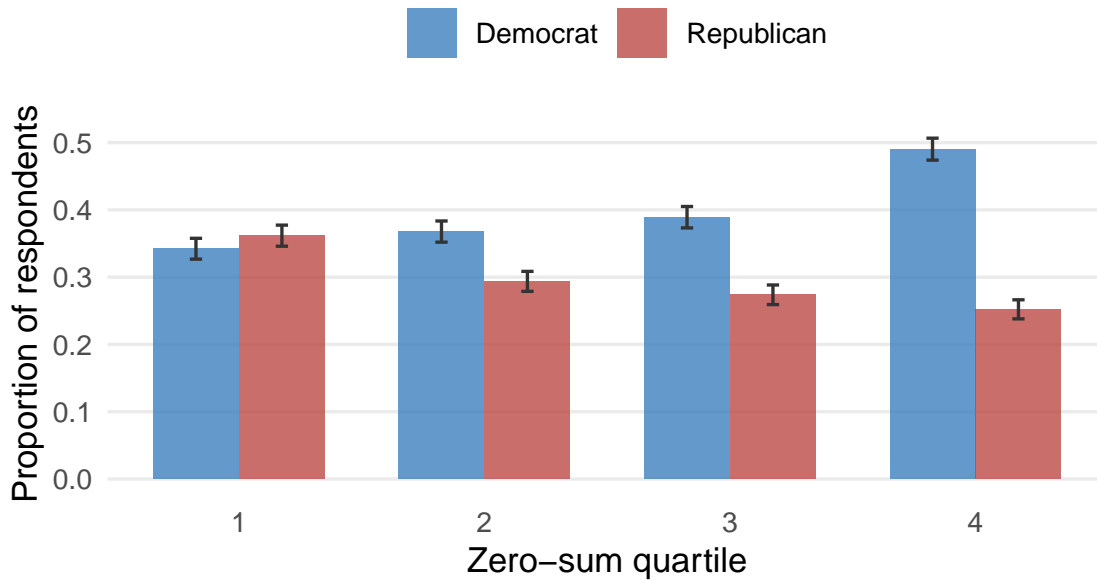


Figure A2: Zero-Sum Thinking and Political Affiliation

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

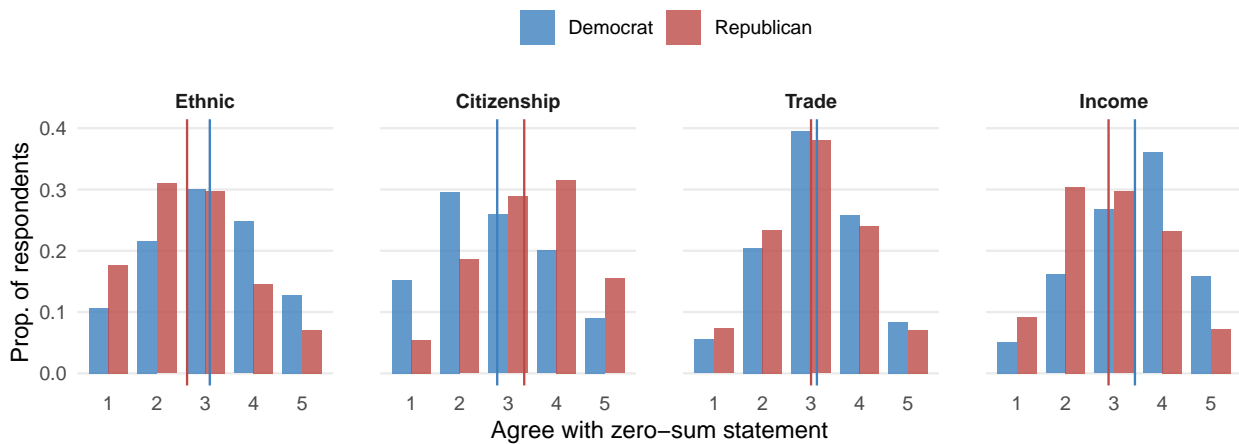
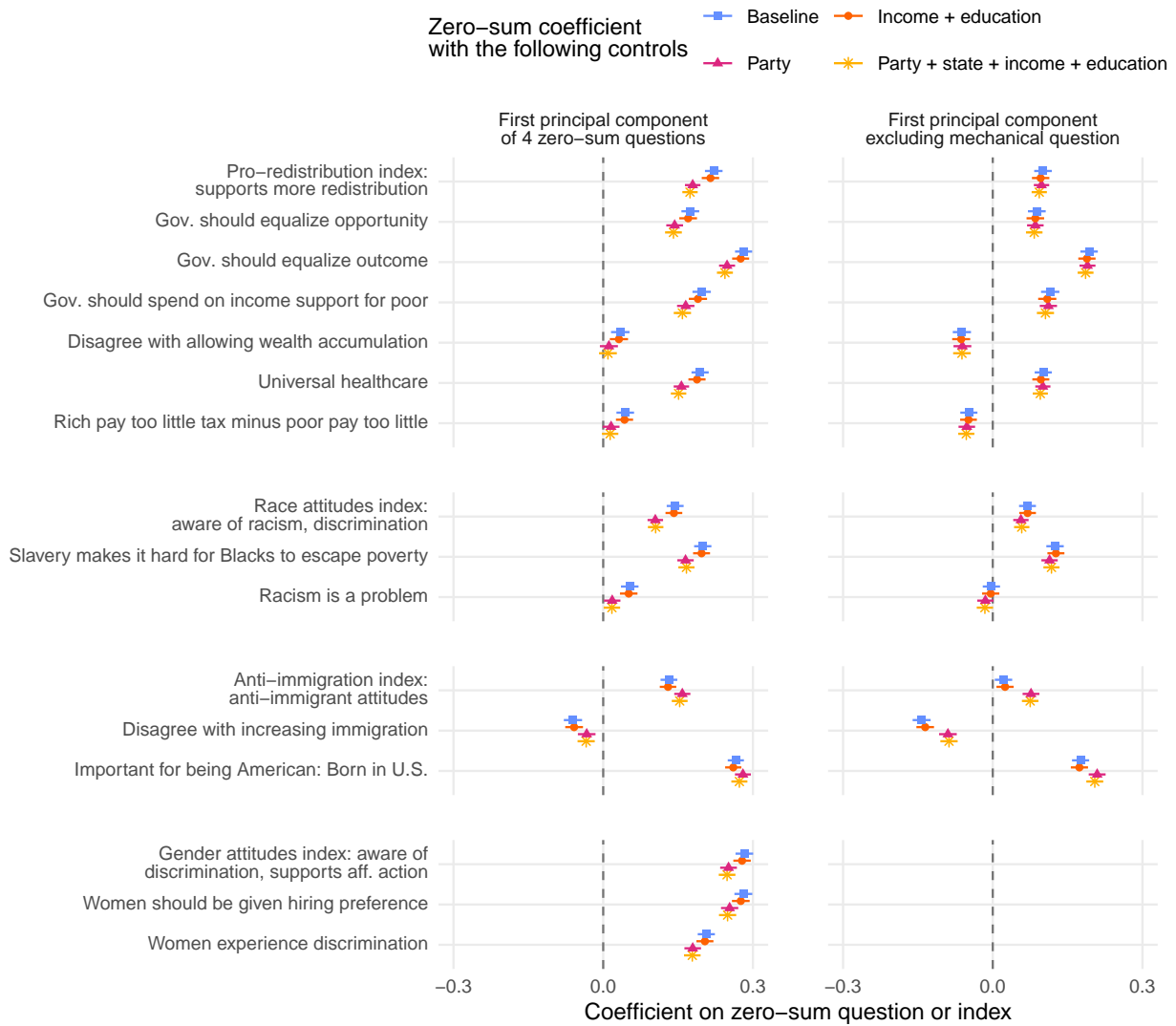


Figure A3: Responses to Zero-Sum Questions by Party

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 A4: Zero-Sum Thinking and Policy Views, By Domain**

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

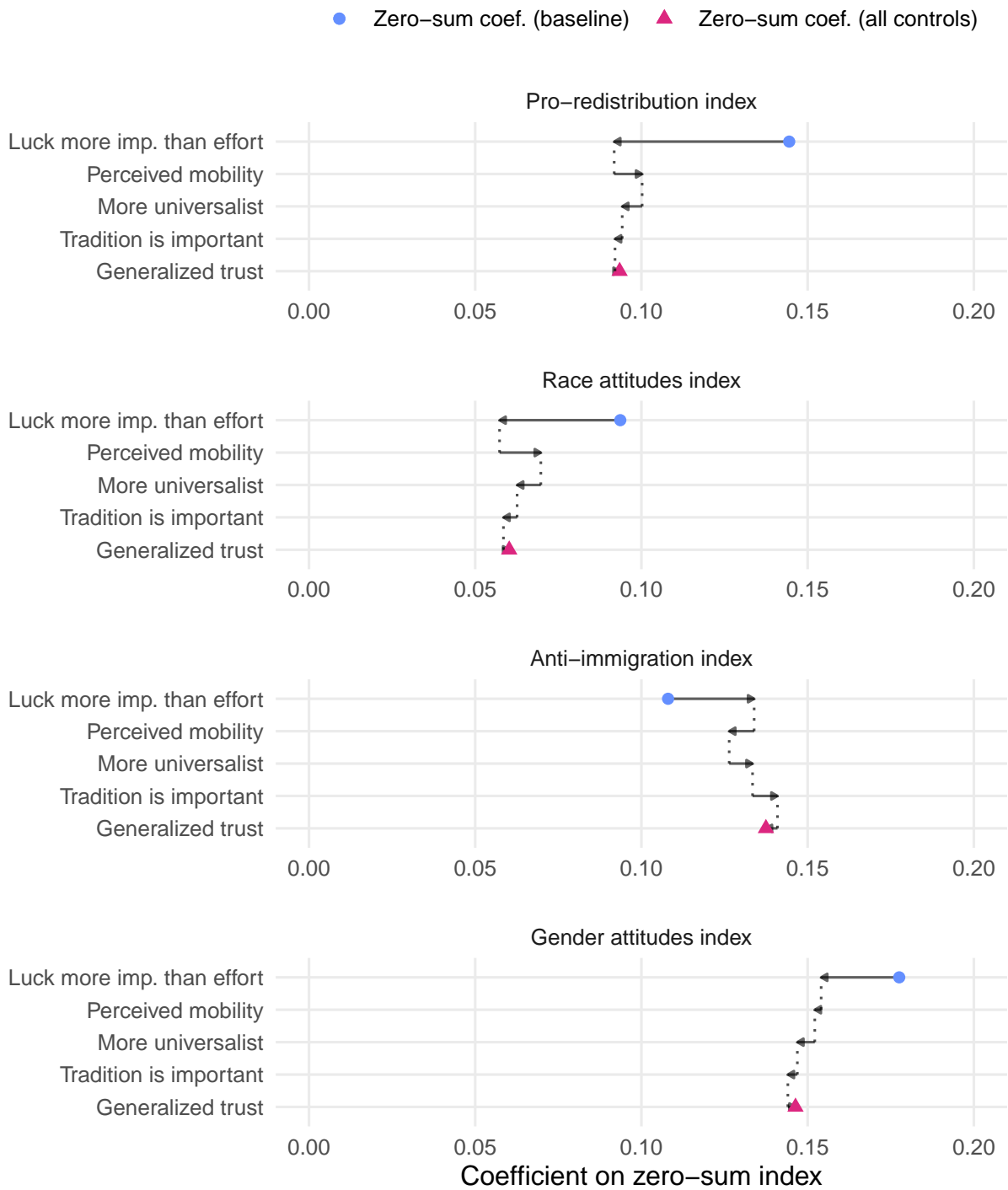


Figure A5: Gelbach Decompositions of Policy Views

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

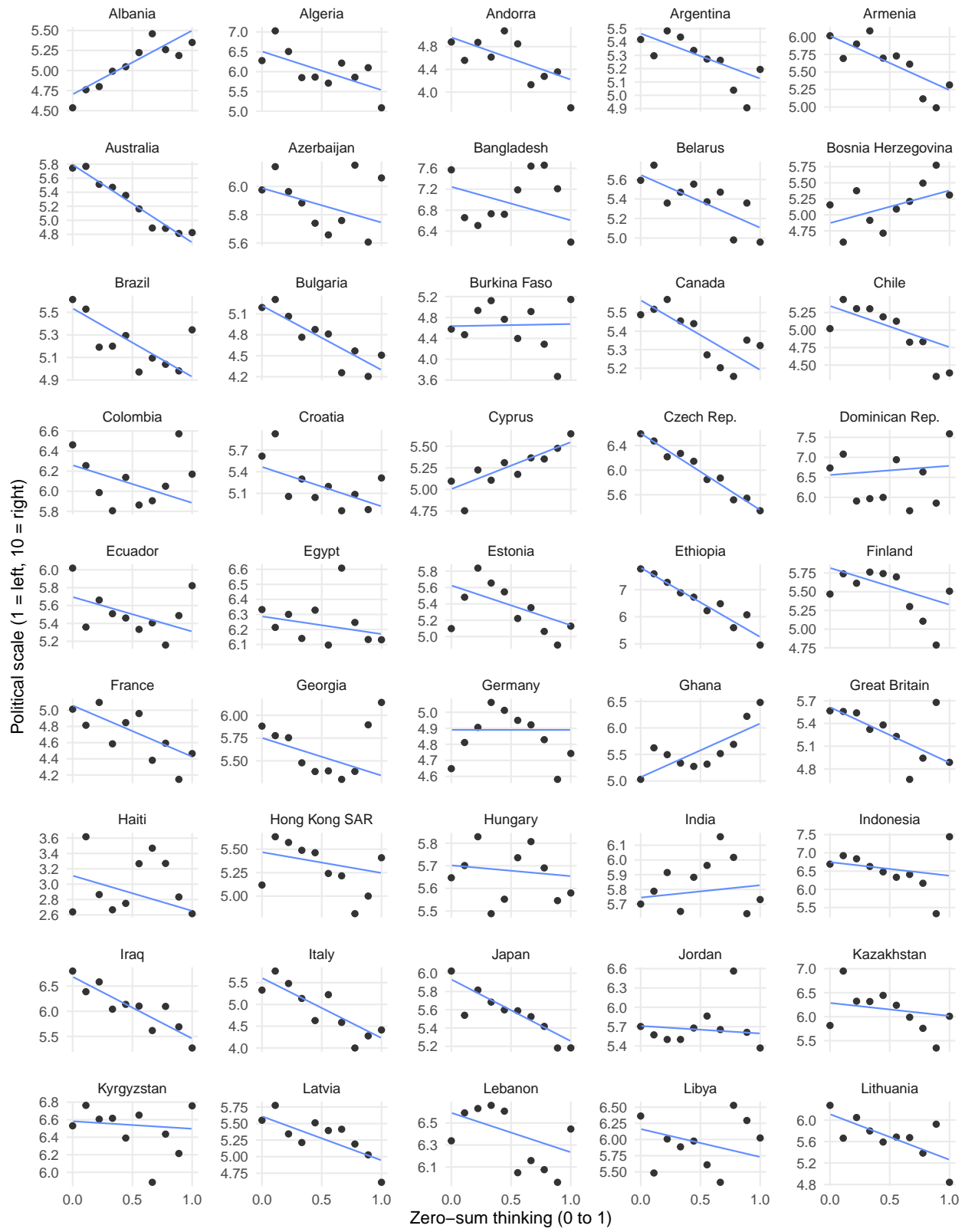


Figure A6: Zero-Sum Thinking and Political Affiliation Within Countries Across the World

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

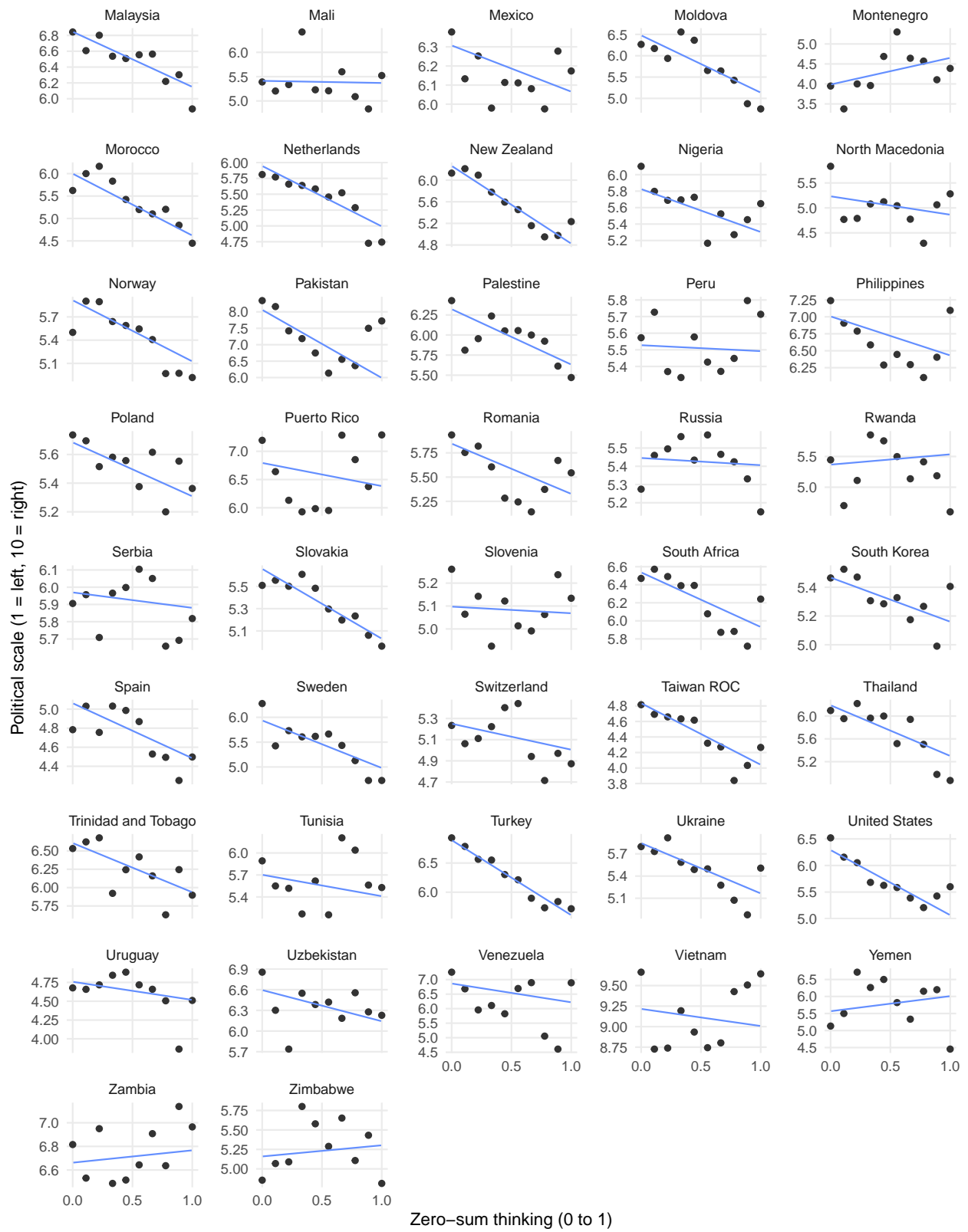


Figure A7: Zero-Sum Thinking and Political Affiliation Within Countries Across the World (cont.)

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



Table A5: PCA Factor Loadings

Index	Variable	1st PC	2nd PC
Anti-immigration index	Disagree with increasing immigration	0.71	-0.71
	Important for being American: Born in U.S.	0.71	0.71
Luck more important than effort	In the US everybody can be economically successful	0.64	-0.27
	Hard work and effort have paid off	0.63	-0.35
	Disagree with success in life is outside one's control	0.44	0.90
Perceived mobility	Poor family to 1st quintile	0.55	0.45
	Poor family to 2nd quintile	0.35	-0.32
	Poor family to 3rd quintile	-0.13	-0.75
	Poor family to 4th quintile	-0.53	0.07
	Poor family to 5th quintile	-0.53	0.36
Race attitudes index	Slavery makes it hard for Blacks to escape poverty	0.71	-0.71
	Racism is a problem	0.71	0.71
Pro-redistribution index	Gov. should equalize outcome	0.45	-0.34
	Gov. should equalize opportunity	0.44	-0.33
	Universal healthcare	0.43	-0.15
	Gov. should spend on income support for poor	0.42	-0.12
	Rich pay too little tax minus poor pay too little	0.34	0.64
	Disagree with allowing wealth accumulation	0.34	0.58
Universalist morals	Money to member of organization	0.50	0.50
	Money to US person	0.50	-0.50
	Money to non-US person	-0.50	0.50
	Money to non-member of organization	-0.50	-0.50
Gender attitudes index	Women experience discrimination	0.71	-0.71
	Women should be given hiring preference	0.71	0.71
Zero-sum index	If an ethnic group becomes richer, this comes at the expense of other groups	0.55	-0.25
	In international trade, if one country makes more money, then the other makes less	0.52	-0.02
	If one income class becomes wealthier, it is at the expense of others	0.52	-0.39
	If non-U.S. citizens do better economically, this is at the expense of citizens	0.40	0.88

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

Table A6: PCA Factor Loadings for Zero-Sum Indices

	Zero-sum index	Minus ethnic	Minus citizenship	Minus income
Ethnic	0.55	-	0.60	0.60
Citizenship	0.40	0.52	-	0.51
Trade	0.52	0.62	0.56	0.61
Income	0.52	0.58	0.57	-

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

Table A7: Multivariate Regression of Zero-Sum Thinking on Individual Characteristics

	Dependent variable: Zero-sum index (0 to 1)			
	(1)	(2)	(3)	(4)
Age 30-39	0.015*** (0.006)	0.018*** (0.006)	0.018*** (0.006)	0.017*** (0.006)
Age 40-49	0.009 (0.006)	0.011* (0.006)	0.011* (0.006)	0.011* (0.006)
Age 50-59	-0.050*** (0.005)	-0.046*** (0.005)	-0.045*** (0.005)	-0.046*** (0.005)
Age 60+	-0.068*** (0.005)	-0.068*** (0.005)	-0.069*** (0.005)	-0.069*** (0.005)
Male	0.039*** (0.003)	0.039*** (0.003)	0.040*** (0.003)	0.040*** (0.003)
Other gender	0.044* (0.024)	0.038 (0.023)	0.039* (0.023)	0.040* (0.023)
African American/Black	0.075*** (0.006)	0.070*** (0.006)	0.058*** (0.006)	0.054*** (0.006)
American Indian/Alaska Native	0.013 (0.023)	0.009 (0.023)	0.012 (0.023)	0.009 (0.023)
Asian/Asian American	-0.020*** (0.007)	-0.016** (0.007)	-0.017** (0.007)	-0.017** (0.008)
Hispanic/Latino	0.009 (0.006)	0.007 (0.006)	0.002 (0.006)	0.0001 (0.007)
Native Hawaiian/Pacific Islander	-0.054 (0.034)	-0.056 (0.035)	-0.063* (0.036)	-0.058 (0.038)
Other race	-0.007 (0.011)	-0.011 (0.011)	-0.010 (0.011)	-0.010 (0.011)
Born in U.S.	0.035*** (0.007)	0.035*** (0.007)	0.031*** (0.007)	0.032*** (0.007)
\$15,000–\$24,999		-0.002 (0.008)	-0.004 (0.008)	-0.004 (0.008)
\$25,000–\$39,999		-0.012* (0.007)	-0.013* (0.007)	-0.013* (0.007)
\$40,000–\$54,999		-0.031*** (0.007)	-0.032*** (0.007)	-0.032*** (0.007)
\$55,000–\$74,999		-0.030*** (0.007)	-0.031*** (0.007)	-0.031*** (0.007)
\$75,000–\$99,999		-0.021*** (0.007)	-0.022*** (0.007)	-0.022*** (0.007)
\$100,000–\$149,999		-0.026*** (0.007)	-0.028*** (0.007)	-0.028*** (0.007)
\$150,000+		-0.031*** (0.008)	-0.033*** (0.008)	-0.033*** (0.008)
Some high school		0.044 (0.034)	0.041 (0.034)	0.045 (0.034)
High school degree/GED		0.045 (0.033)	0.043 (0.033)	0.045 (0.033)
Some college		0.025 (0.033)	0.022 (0.033)	0.024 (0.033)
2-year college degree		0.033 (0.033)	0.029 (0.033)	0.031 (0.033)
4-year college degree		0.018 (0.033)	0.012 (0.033)	0.014 (0.033)
Master's degree, M.B.A.		0.046 (0.033)	0.037 (0.033)	0.038 (0.033)
Ph.D., J.D., M.D.		0.067* (0.034)	0.056 (0.034)	0.056 (0.034)
Strong Republican			0.007 (0.006)	0.006 (0.006)
Moderate Republican			-0.003 (0.005)	-0.004 (0.005)
Moderate Democrat			0.026*** (0.005)	0.025*** (0.005)
Strong Democrat			0.046*** (0.005)	0.045*** (0.005)
Other party			-0.009 (0.010)	-0.010 (0.010)
Wave fixed effects	✓	✓	✓	✓
State fixed effects				✓
Observations	14,432	14,430	14,430	14,430
R <sup>2</sup>	0.057	0.064	0.071	0.076
Dependent variable mean	0.506	0.506	0.506	0.506
Dependent variable std. dev.	0.207	0.207	0.207	0.207

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

Table A8: Zero-Sum Thinking and Political Affiliation Across the World

Country	Coefficient on left-right index	Num. of obs.	Mean of zero-sum index
<b>Full sample</b>	-0.079*** (0.009)	192,172	0.405
Albania	0.142*** (0.045)	889	0.468
Algeria	-0.219*** (0.065)	530	0.487
Andorra	-0.155*** (0.048)	907	0.431
Argentina	-0.100 (0.049)	2,932	0.391
Armenia	-0.136 (0.039)	2,150	0.376
Australia	-0.204*** (0.011)	4,492	0.430
Azerbaijan	-0.039 (0.063)	2,276	0.328
Bangladesh	-0.128*** (0.043)	1,053	0.337
Belarus	-0.130 (0.101)	3,569	0.378
Bosnia Herzegovina	0.092** (0.041)	1,096	0.505
Brazil	-0.073** (0.022)	4,938	0.281
Bulgaria	-0.157 (0.086)	1,548	0.495
Burkina Faso	0.006 (0.036)	1,073	0.562
Canada	-0.076 (0.054)	3,032	0.355
Chile	-0.111* (0.041)	3,475	0.342
Colombia	-0.058 (0.011)	3,489	0.302
Croatia	-0.128*** (0.047)	1,052	0.450
Cyprus	0.079 (0.042)	1,865	0.423
Czech Rep.	-0.237** (0.017)	1,905	0.488
Dominican Rep.	0.031 (0.059)	399	0.280
Ecuador	-0.048 (0.033)	1,137	0.314
Egypt	-0.016 (0.029)	4,235	0.303
Estonia	-0.105 (0.111)	2,016	0.420
Ethiopia	-0.412*** (0.033)	1,308	0.474
Finland	-0.070 (0.093)	1,736	0.412
France	-0.099** (0.041)	924	0.423
Georgia	-0.059 (0.036)	3,226	0.334
Germany	-0.000 (0.031)	5,449	0.427
Ghana	0.146 (0.118)	2,316	0.481
Great Britain	-0.155*** (0.049)	859	0.442
Haiti	-0.058** (0.026)	1,944	0.877
Hong Kong SAR	-0.044 (0.045)	975	0.322
Hungary	-0.009 (0.030)	1,392	0.545
India	0.014 (0.046)	6,933	0.522
Indonesia	-0.048 (0.031)	1,313	0.323
Iraq	-0.161*** (0.037)	960	0.405
Italy	-0.199*** (0.044)	721	0.376
Japan	-0.089** (0.016)	3,435	0.449
Jordan	-0.015 (0.063)	323	0.515
Kazakhstan	-0.050 (0.035)	1,500	0.403
Kyrgyzstan	-0.017 (0.037)	1,454	0.354
Latvia	-0.178*** (0.054)	927	0.291
Lebanon	-0.066 (0.047)	827	0.459
Libya	-0.063* (0.033)	1,361	0.303

Table A9: Zero-Sum Thinking and Political Affiliation Across the World (cont.)

Country	Coefficient on left-right index	Num. of obs.	Mean of zero-sum index
Libya	-0.063* (0.033)	1,361	0.303
Lithuania	-0.157*** (0.051)	704	0.422
Malaysia	-0.111*** (0.035)	1,300	0.349
Mali	-0.006 (0.034)	1,149	0.502
Mexico	-0.036* (0.012)	5,593	0.322
Moldova	-0.227 (0.110)	1,577	0.378
Montenegro	0.143 (0.110)	177	0.497
Morocco	-0.235 (0.054)	678	0.539
Netherlands	-0.138 (0.032)	2,455	0.448
New Zealand	-0.247*** (0.007)	1,970	0.413
Nigeria	-0.082* (0.025)	4,283	0.470
North Macedonia	-0.084 (0.060)	640	0.516
Norway	-0.129** (0.009)	2,078	0.400
Pakistan	-0.395*** (0.038)	1,200	0.321
Palestine	-0.126** (0.050)	724	0.507
Peru	-0.006 (0.010)	3,016	0.308
Philippines	-0.093* (0.014)	2,357	0.402
Poland	-0.066 (0.029)	2,899	0.383
Puerto Rico	-0.056 (0.039)	913	0.289
Romania	-0.087 (0.040)	2,848	0.404
Russia	-0.009 (0.047)	3,545	0.411
Rwanda	0.017 (0.009)	2,554	0.360
Serbia	-0.016*** (0.000)	1,770	0.490
Slovakia	-0.123 (0.072)	1,384	0.539
Slovenia	-0.006 (0.049)	2,018	0.508
South Africa	-0.099 (0.051)	9,720	0.382
South Korea	-0.049 (0.049)	4,818	0.418
Spain	-0.122** (0.022)	3,764	0.484
Sweden	-0.109** (0.033)	3,764	0.438
Switzerland	-0.052 (0.027)	1,989	0.388
Taiwan ROC	-0.104 (0.048)	3,071	0.285
Thailand	-0.117 (0.050)	2,710	0.290
Trinidad and Tobago	-0.104 (0.083)	1,203	0.313
Tunisia	-0.088 (0.066)	691	0.388
Turkey	-0.220*** (0.031)	5,087	0.453
Ukraine	-0.167** (0.038)	3,467	0.413
United States	-0.215* (0.087)	6,182	0.401
Uruguay	-0.038 (0.057)	2,504	0.378
Uzbekistan	-0.126* (0.069)	583	0.336
Venezuela	-0.089** (0.041)	834	0.375
Vietnam	-0.096 (0.059)	1,333	0.374
Yemen	0.072 (0.082)	244	0.292
Zambia	0.016 (0.040)	935	0.410
Zimbabwe	0.022 (0.032)	1,500	0.449

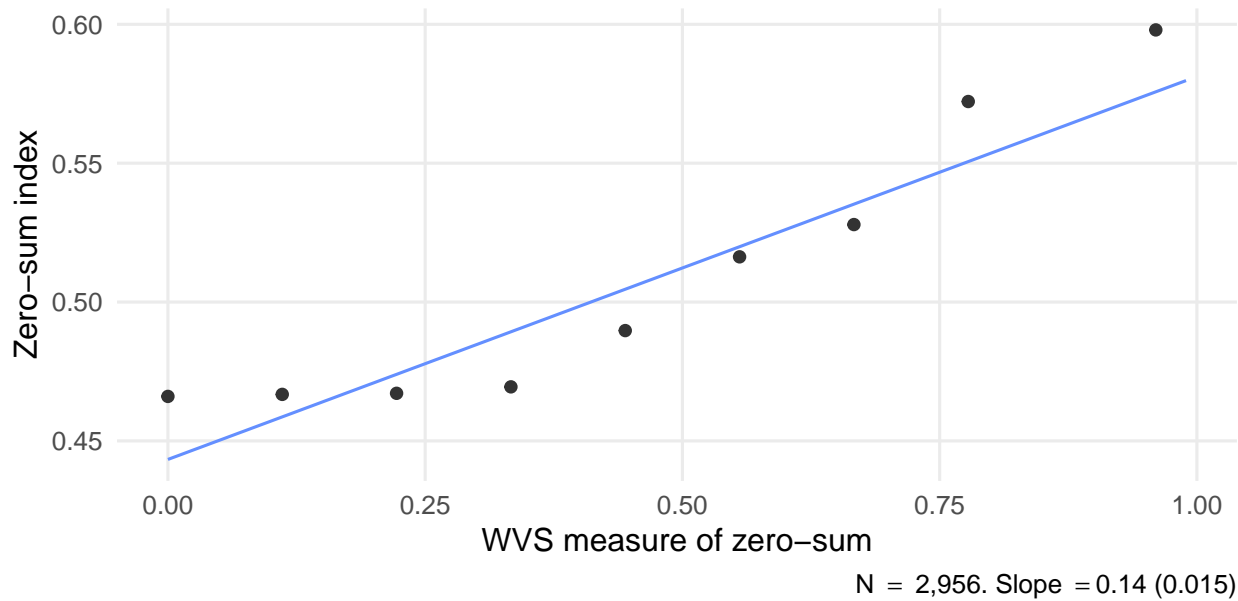


Figure A8: Zero-Sum index and World Value Survey measure of zero-sum thinking

Notes: The figure reports a binscatter correlation plot of the relationship between zero-sum composite index and the World Value Survey question on zero-sum thinking. Both variables are scaled to be between 0 and 1. Data are from the last wave of the survey.

Table A10: Zero-Sum Thinking and U.S. Political Events

Dependent variable:	Sympathetic towards Capitol rioters		QAnon contains some truths	
	(1)	(2)	(3)	(4)
Zero-sum index (0 to 1)	0.366*** (0.028)	0.360*** (0.027)	0.333*** (0.028)	0.337*** (0.027)
Demographic controls	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓
Party fixed effects		✓		✓
Observations	2,915	2,915	2,093	2,093
R <sup>2</sup>	0.182	0.221	0.196	0.253
Dependent variable mean	0.298	0.298	0.524	0.524
Dependent variable std. dev.	0.283	0.283	0.258	0.258

Notes: The table reports OLS estimates where the unit of observation is an individual. Dependent variables, like the zero-sum index, are rescaled to run between 0 and 1. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Robust standard errors are in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table A11: Zero-Sum Thinking and Own Ancestral Economic Mobility, Variables Included Individually

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's lifetime mobility	-0.0117*** (0.0014)	-0.0118*** (0.0014)	-0.0114*** (0.0014)						
Father's lifetime mobility				-0.0121*** (0.0017)	-0.0120*** (0.0017)	-0.0118*** (0.0017)			
Grandfather's lifetime mobility							-0.0090*** (0.0026)	-0.0088*** (0.0026)	-0.0095*** (0.0026)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects			✓			✓			✓
Observations	13,888	13,888	13,888	12,162	12,162	12,162	9,200	9,200	9,200
R <sup>2</sup>	0.052	0.059	0.070	0.057	0.065	0.076	0.066	0.074	0.086
Dependent variable mean	0.505	0.505	0.505	0.508	0.508	0.508	0.521	0.521	0.521
Dependent variable std. dev.	0.207	0.207	0.207	0.212	0.212	0.212	0.217	0.217	0.217

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

Table A12: Zero-Sum Thinking and Own Ancestral Economic Mobility: U.S. Only

	Dependent variable: Zero-sum index (0 to 1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Respondent's lifetime mobility	-0.0210*** (0.0024)	-0.0214*** (0.0024)	-0.0215*** (0.0024)			
Father's lifetime mobility	-0.0302*** (0.0027)	-0.0303*** (0.0027)	-0.0305*** (0.0027)			
Grandfather's lifetime mobility	-0.0256*** (0.0033)	-0.0257*** (0.0032)	-0.0265*** (0.0032)			
Grandfather to respondent mobility				-0.0244*** (0.0020)	-0.0247*** (0.0019)	-0.0250*** (0.0019)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓
Race fixed effects			✓			✓
Observations	6,827	6,827	6,827	7,064	7,064	7,064
R <sup>2</sup>	0.092	0.105	0.115	0.088	0.101	0.111
Dependent variable mean	0.530	0.530	0.530	0.531	0.531	0.531
Dependent variable std. dev.	0.218	0.218	0.218	0.218	0.218	0.218

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. Mobility measures are missing if they are in reference to relative income measured outside of the U.S. Demographic controls include age and age squared and their interactions with gender indicators. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Robust standard errors are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels.

Table A13: Zero-Sum Thinking and Immigration, Variables Included Individually

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent immigrated	-0.0429*** (0.0066)	-0.0425*** (0.0067)	-0.0321*** (0.0073)						
Parent immigrated				-0.0298*** (0.0054)	-0.0294*** (0.0055)	-0.0222*** (0.0058)			
Grandparent immigrated							0.0015 (0.0050)	0.0031 (0.0050)	0.0052 (0.0050)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	14,432	14,432	14,432	14,349	14,349	14,349	13,260	13,260	13,260
R <sup>2</sup>	0.047	0.053	0.063	0.048	0.054	0.065	0.046	0.053	0.065
Dependent variable mean	0.506	0.506	0.506	0.506	0.506	0.506	0.504	0.504	0.504
Dependent variable std. dev.	0.207	0.207	0.207	0.207	0.207	0.207	0.208	0.208	0.208

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

Table A14: Zero-Sum Thinking and County Foreign Share 1860-1920: Fathers and Grandfathers

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent’s county foreign share	-0.0206 (0.0241)	0.0060 (0.0220)	0.0039 (0.0219)						
Father’s county foreign share				-0.0517** (0.0213)	-0.0466** (0.0182)	-0.0319* (0.0174)			
Grandfather’s county foreign share							-0.0449** (0.0224)	-0.0604*** (0.0212)	-0.0397* (0.0217)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	12,566	12,566	12,566	9,963	9,963	9,963	6,176	6,176	6,176
R <sup>2</sup>	0.039	0.046	0.057	0.046	0.055	0.066	0.056	0.070	0.082
Num. clusters	1,735	1,735	1,735	1,873	1,873	1,873	1,662	1,662	1,662
Dependent variable mean	0.501	0.501	0.501	0.503	0.503	0.503	0.513	0.513	0.513
Dependent variable std. dev.	0.202	0.202	0.202	0.206	0.206	0.206	0.213	0.213	0.213

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 fathers and paternal grandfathers. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent’s current state of residence. Standard errors are clustered by the relevant county and are reported in parentheses.

Table A15: Zero-Sum Thinking and County Foreign Share 1860-1920: Fathers and Grandfathers (With Immigrant Generation Controls)

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county foreign share	0.0039 (0.0219)	0.0096 (0.0224)	0.0149 (0.0227)						
Father's county foreign share				-0.0319* (0.0174)	-0.0285 (0.0174)	-0.0326 (0.0201)			
Grandfather's county foreign share							-0.0397* (0.0217)	-0.0395* (0.0218)	-0.0433** (0.0219)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
2nd generation immigrant		✓	✓		✓	✓		✓	✓
3rd generation immigrant			✓			✓			✓
Observations	12,566	12,508	11,553	9,963	9,962	9,397	6,176	6,175	6,175
R <sup>2</sup>	0.057	0.059	0.060	0.066	0.067	0.068	0.082	0.082	0.082
Num. clusters	1,735	1,735	1,696	1,873	1,873	1,848	1,662	1,662	1,662
Dependent variable mean	0.501	0.501	0.499	0.503	0.503	0.501	0.513	0.513	0.513
Dependent variable std. dev.	0.202	0.202	0.203	0.206	0.206	0.207	0.213	0.213	0.213

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 fathers and paternal grandfathers. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the relevant county and are reported in parentheses.

Table A16: Zero-Sum Thinking and County Foreign Share 1920: Fathers and Grandfathers

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county foreign share	-0.0142 (0.0312)	0.0060 (0.0274)	0.0043 (0.0272)						
Father's county foreign share				-0.0578** (0.0268)	-0.0616*** (0.0212)	-0.0457** (0.0196)			
Grandfather's county foreign share							-0.0442* (0.0268)	-0.0742*** (0.0234)	-0.0521** (0.0236)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	12,819	12,819	12,819	10,140	10,140	10,140	6,267	6,267	6,267
R <sup>2</sup>	0.039	0.046	0.057	0.047	0.056	0.067	0.056	0.071	0.082
Num. clusters	1,778	1,778	1,778	1,918	1,918	1,918	1,700	1,700	1,700
Dependent variable mean	0.501	0.501	0.501	0.503	0.503	0.503	0.513	0.513	0.513
Dependent variable std. dev.	0.202	0.202	0.202	0.206	0.206	0.206	0.213	0.213	0.213

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., as of the 1920 Census. All shares are for the counties where the respondent or their ancestor grew up, defined as ages 10 to 19 for respondents and ages 7 to 17 for fathers and paternal grandfathers. Demographic controls include age and age squared and their interactions with gender indicators, as well as whether the respondent was born in the U.S. Race fixed effects refer to the race of the respondent. State fixed effects refer to the respondent's current state of residence. Standard errors are clustered by the relevant county and are reported in parentheses.



Table A17: Zero-Sum Thinking and Growing Up in Counties With Historical Enslavement: Fathers and Grandfathers

	Dependent variable: Zero-sum index (0 to 1)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Respondent's county enslaved share	0.0514*** (0.0129)	0.0582*** (0.0157)	0.0372** (0.0156)	0.0377** (0.0156)								
Father's county enslaved share					0.0655*** (0.0140)	0.0684*** (0.0162)	0.0309* (0.0168)	0.0267 (0.0166)				
Grandfather's county enslaved share									0.0556*** (0.0166)	0.0727*** (0.0190)	0.0352* (0.0197)	0.0245 (0.0197)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓	✓		✓	✓	✓		✓	✓	✓
Race fixed effects			✓	✓			✓	✓			✓	✓
Enslaved ancestor				✓				✓				✓
Observations	13,118	13,118	13,118	13,118	10,354	10,354	10,354	10,354	6,418	6,418	6,418	6,418
R <sup>2</sup>	0.040	0.046	0.057	0.062	0.049	0.057	0.067	0.076	0.057	0.071	0.081	0.097
Num. clusters	1,836	1,836	1,836	1,836	1,984	1,984	1,984	1,984	1,762	1,762	1,762	1,762
Dependent variable mean	0.501	0.501	0.501	0.501	0.504	0.504	0.504	0.504	0.514	0.514	0.514	0.514
Dependent variable std. dev.	0.202	0.202	0.202	0.202	0.206	0.206	0.206	0.206	0.213	0.213	0.213	0.213

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

Table A18: Zero-Sum Thinking and Growing Up in Counties With Historical Enslavement, With Enslaved Ancestor Controls

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county enslaved share	0.0372** (0.0156)	0.0377** (0.0156)	0.0355** (0.0155)						
Parents' counties enslaved share				0.0484*** (0.0153)	0.0463*** (0.0153)	0.0444*** (0.0151)			
Grandparents' counties enslaved share							0.0411** (0.0169)	0.0328* (0.0169)	0.0345** (0.0167)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Enslaved ancestors		✓	✓		✓	✓		✓	✓
Enslaved ancestors × race			✓			✓			✓
Observations	13,118	13,118	13,118	11,579	11,579	11,579	9,003	9,003	9,003
R <sup>2</sup>	0.057	0.062	0.067	0.065	0.073	0.081	0.069	0.082	0.091
Num. clusters	1,836	1,836	1,836	5,972	5,972	5,972	6,899	6,899	6,899
Dependent variable mean	0.501	0.501	0.501	0.504	0.504	0.504	0.507	0.507	0.507
Dependent variable std. dev.	0.202	0.202	0.202	0.204	0.204	0.204	0.208	0.208	0.208

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

## Appendix C. Survey questionnaire

Below is the survey questionnaire. Brackets indicate variations between survey waves, where [W1] means that a given question or answer choice was used in the first survey wave, [W1-3] means it was used in survey waves one to three, and so on. If there are no waves specified, it means that the question or answer choice appeared in all five survey waves.

### 1. Consent

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

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

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

*Yes, I would like to take part in this study, and confirm that I am 18 or older*

*No, I would not like to participate*

### 2. 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] Would you describe the area in which you live as:

*Urban; Suburban; Rural*

### **3. 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 ≤ 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 ≤ 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]*

#### ***4. Own demographics, Continued***

31. [W5] 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. [W5] 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]*

42. [W5] How important is religion in your life?

*Very important; Somewhat important; Not too important; Not at all important*

## **5. Political Views**

43. 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]*

44. Who did you vote for in the 2016 election?

*Hillary Clinton; Donald Trump; Other [text box]; I did not vote*

45. (If "I did not vote" to Q44) Who would you have voted for in the 2016 election if you had voted?

*Hillary Clinton; Donald Trump; Other [text box]*

46. [W4, W5] Who did you vote for in the 2020 election?  
*Joe Biden; Donald Trump; Other [text box] I did not vote*
47. [W5] (If "I did not vote" to Q46) Who would you have voted for in the 2020 election if you had voted?  
*Joe Biden; Donald Trump; Other [text box]*
48. On economic policy matters, where do you see yourself on the liberal/conservative spectrum?  
*Very liberal, Liberal, Moderate, Conservative, Very conservative*

## 6. Parents' Demographics

**N.B.** The brackets indicate that the demographic questions in this section we asked these questions both 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.*

49. [W4, W5] Is your [father/mother] currently alive?  
*Yes; No; Don't know*
50. [W4, W5] (If "Yes" to Q49) What is the age of your [father/mother]?  
*[text box]*
51. [W4, W5] (If "Yes" to Q49 and no response to Q50) What is the year of birth of your [father/mother]?  
*[text box]*
52. [W4, W5] (If "No" to Q49) In what year did [he/she] die?  
*[text box]*
53. [W4, W5] (If "No" to Q49) How old was he when [he/she] died?  
*[text box]*
54. [W4, W5] (If "No" to Q49 and no response to Q52 or Q53 ) 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.

55. [W1-W4] Was your [father/mother] born in the United States?  
*[Yes; No; Don't know]*
56. [W1-W4] (If "No" to Q55) In what country was your [father/mother] born?  
*[dropdown]*
57. [W1-W4] (If "Yes" to Q55) In which state was your [father/mother] born?  
*[dropdown]*
58. [W1-W4] (If "Yes" to Q55) In which town was your [father/mother] born?  
*[text box]*

59. Did your **[father/mother]** primarily grow up (age 7-17) in the United States?  
*Yes; No; Don't know*
60. (If "No" to Q59) In what country did you **[father/mother]** primarily grow up?  
*[dropdown menu]*
61. (If "Yes" to Q59) In which state did your **[father/mother]** primarily grow up?  
*[dropdown menu]*
62. (If "Yes" to Q59) In which town did your **[father/mother]** primarily grow up?  
*[text box]*
63. 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*
64. What was/is the occupation of your **[father/mother]** as an adult?  
*[text box]*
65. [W5] 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*
66. **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.*

## 7. 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" would be defined as "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.*

67. [W<sub>4</sub>, W<sub>5</sub>] Is your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother]) currently alive?  
*Yes; No; Don't know*
68. [W<sub>4</sub>, W<sub>5</sub>] (If "Yes" to Q67) What is the age of your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother])?  
*[text box]*
69. [W<sub>4</sub>, W<sub>5</sub>] (If "Yes" to Q67 and no response to Q68) What is the year of birth of your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother])?  
*[text box]*
70. [W<sub>4</sub>, W<sub>5</sub>] (If "No" to Q67) In what year did [she/he] die?  
*[text box]*
71. [W<sub>4</sub>, W<sub>5</sub>] (If "No" to Q67) How old was he when [she/he] died?  
*[text box]*
72. [W<sub>4</sub>, W<sub>5</sub>] (If "No" to Q67 and no response to Q70 or Q71) What is the year of birth of your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother])?  
*[text box]*
73. 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*
74. (If "No" to Q73) In what country did your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother]) primarily grow up?  
*[dropdown menu]*
75. (If "Yes" to Q73) In which state did your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother]) primarily grow up?  
*[dropdown menu]*
76. (If "Yes" to Q73) In which town did your [paternal/maternal] [grandfather/grandmother] ([father/mother] of your [father/mother]) primarily grow up?  
*[text box]*
77. 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*



78. What was the occupation of your [paternal/maternal] [grandfather/grandmother] ([parent of your parent]) as an adult?  
[text box]

79. [W5] 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*

80. 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*

### **8. Family's Veteran Status**

81. 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*

82. [W1-W4] (If "None" or "I don't know" is not selected for Q81) 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*

83. [W1-W4] (If "None" or "I don't know" is not selected for Q81) 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*

84. [W1-W4] (If "None" or "I don't know" is not selected for Q81) 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*

85. [W1-W4] (If "None" or "I don't know" is not selected for Q81) 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*
86. [W1-W4] (If "None" or "I don't know" is not selected for Q81) 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*

### **9. Veteran Status Information**

**N.B.** We ask the questions below about veteran status and service history for the respondent themselves 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")

87. (If "None" or "Don't know" is not selected to Q81) 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*
88. 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]*
89. (If "National Guard" or a "Reserve" to Q87) For how many years did was/has [person] been in the Reserve or National Guard?  
*[text box]*
90. (If > 0 to Q88) In which year did [person's] active duty status begin?  
*[text box]*
91. 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]*
92. (If "World War II," "Korean War," or "Vietnam War" to Q91) Was [person] drafted or did [they] volunteer?  
*Drafted, Volunteered, Don't know [for other family members only]*

### **10. Enslavement Status**

93. 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*

94. [W1-W4] (If "Yes" to Q93) Which of your ancestors were enslaved at some point in their life?

[textbox]

95. [W5] 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*

### 11. Relative Income

**N.B.** The brackets for Q96 indicate that we ask the about the relative income for the respondent, their mother, father, paternal grandfather, paternal grandmother, maternal grandfather, and maternal grandmother.

96. **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*

97. **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*

### 12. Perceptions of fairness and mobility

98. *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*

99. *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*

100. Which has more to do with why a person is poor?

*Lack of effort on their own part; Circumstances beyond their control*

101. [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*

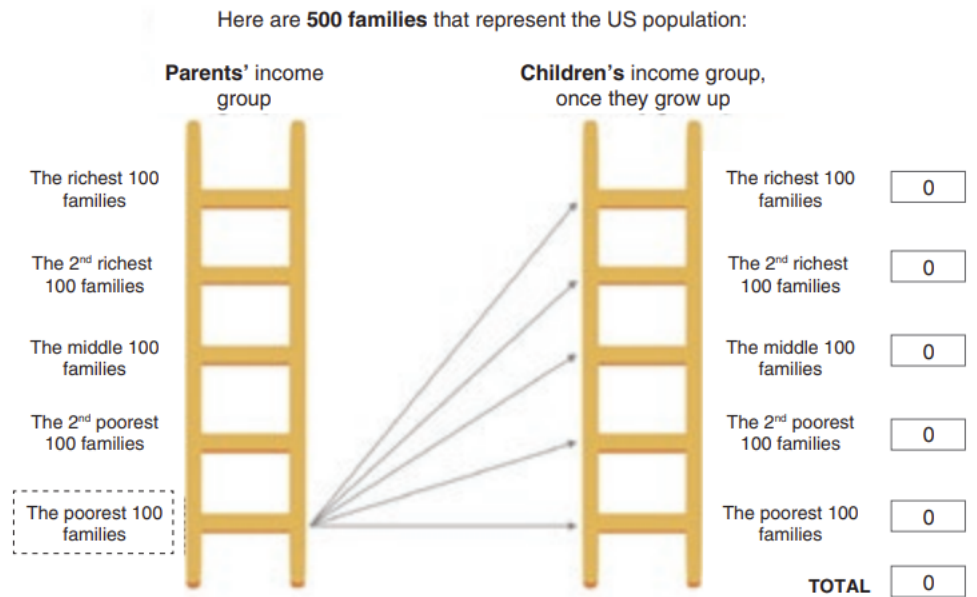
102. **We would now like to ask you what you think about the life opportunities of children from very poor families.**

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.



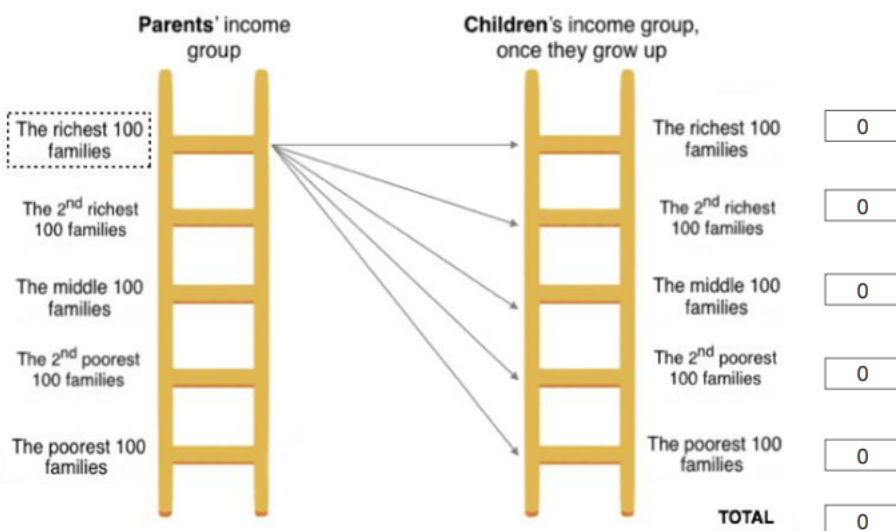
103. [W1-W4] Do you think that a child from the **poorest 100 families** will grow up to be among the **richest 100 families** are:  
*Close to zero; Low; Fairly low; Fairly high; High*
104. [W1-W4] Do you think that a child from the **poorest 100 families** will grow up to be among the **second richest 100 families** are:  
*Close to zero; Low; Fairly low; Fairly high; High*
105. [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.

Here are 500 families that represent the US population:



106. 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*
107. Thinking about your past achievements, do you believe that your hard work and effort in life have paid off or not?  
*They have paid off a lot; They have paid off somewhat; They have not paid off at all*
108. [W1-W4] Thinking about your future achievements, do you believe that your hard work in life will pay off or not?  
*[They will pay off a lot; They will pay off somewhat; They will not pay off at all]*
109. [W1-W4] (If ≥ 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*
110. [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*

### 13. Views about redistribution

111. 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

112. 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

113. 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*

114. 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*

115. Here are several things that the local, state, or federal government might spend more funds on. Please indicate if you favor or oppose them. Keep in mind that **in order to finance an expansion of any of these programs, other types of spending would have to be scaled down or taxes would have to be raised.**

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

#### 14. 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.*

116. [W5]

- *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)

117. [W5]

- *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)

118. [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)

119. [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)

### 15. Views about government

120. 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*

121. [W5] 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*

122. 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*

### 16. Views about Race

123. 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*

124. 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*
125. 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*
126. [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*
127. [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]*
128. [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*

**17. Views about migration**

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

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

130. 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*

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

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



**18. Views about Gender**

132. 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*

133. 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*

**19. Views about Gun Ownership**

134. 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*

**20. Views about universal health care**

135. 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*

**21. Views about Patriotism**

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

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

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

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

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

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

## 22. Zero sum mentality

Please tell us whether you agree with the following statements:

139. "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*

140. "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*

141. "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*

142. "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*

143. [W4, W5] 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*

## 23. Happiness

144. 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)*

**24. Mental Health**

145. [W1-4] Over the last 2 weeks, how often have you been bothered by the following problems?

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

**25. 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.*

146. [W5] 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

147. [W5] 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

**26. Open-ended Questions**

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

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

**27. QAnon Question**

150. [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]

151. [W3] 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*

**28. Abortion**

152. [W5] 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*