Zero-Sum Thinking and the Roots of America's Policy 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. We implement a survey among approximately 15,000 individuals living in the United States that measures zero-sum thinking, one's political and policy views, and a rich set of characteristics about their ancestry. We find that a more zero-sum view about how benefits to one person or group tend to come at the cost of others is strongly correlated with a host of policy views about the importance of government, the value of redistributive policies, the value of immigration, and one's political orientation. We find that zero-sum thinking can be explained by experiences of an individual's ancestors (parents, grandparents, great-grandparents), including the amount of intergenerational upward mobility experienced, whether they immigrated to the United States, and whether they were ever enslaved.

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) for better understanding the contemporary social, political, and racial landscape of the United States. Foster hypothesized that many societies have a "zero-sum" view of the world; what he called an "image of limited good". This model of the world suggests that if one person does better, it must be that it is at the expense of somebody else. The implicit view here is that the amount of output in society is limited and productive effort, instead of creating value, redistributes it.

Although Foster himself proposed this as a description of the psychology of rural Mexican society (e.g., Foster, 1962, 1967, 1972), the theory was believed to be more general and he gave many other examples from around the world. In fact, the view of the world as zero-sum emerges time and time again in the historical record, from European Mercantilism in the Early Modern period through to trade and immigration policies today (Thurow, 1980).

It is easy to see how this view arises in a world in which 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 and so more land for one individual means less land for another. The same is true for livestock, wives, authority, and social status. If markets are not developed and there is no technological progress, then the only way for an individual to get ahead is at the expense of others. Therefore, it is logical that this cognitive framework would prevail in many parts of the world. 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 zero-sum, leading to cultural mismatch (Nunn, 2021).

This paper considers the extent to which this framework of understanding human psychology and morality can provide insights into the contemporary social, political, and cultural landscape of the United States. Along these lines, our analysis makes three contributions.

The first contribution is that we provide measures of the prevalence of zero-sum thinking in the United States. We measure zero-sum in four specific domains between: (1) individuals in terms of wealth; (2) U.S. citizens and non-citizens in terms of economic wellbeing; (3) countries in terms of economic gains from trade; (4) income classes in terms of wealth. We use these to check for and distill a single measure that captures the extent to which respondents tend to view the world in zero-sum terms. We find all component variables to be positively correlated and

each projects positively onto a single factor in a principal components analysis. We use this first principal component to create an index that ranges from zero to one and is increasing in zero-sum thinking.

We then study the potential implications of a zero-sum mindset for understanding the contemporary political, social, cultural, and racial landscape of the United States. We find that individuals who view the world in more zero-sum terms tend to be more supportive of policies that redistribute income from the rich to the poor. This includes redistributive policies like taxation, universal healthcare, and affirmative action for women and African Americans. Consistent with these specific views, we also find that zero-sum thinking is associated with more preference for liberal economic policies in general and with stronger political alignment with Democratic Party and weaker alignment with the Republican Party.

We also find that zero-sum thinking is linked empirically to important political crises experienced in the United States. Specifically, we find that individuals that 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 the theories of QAnon are all narratives that are zero-sum in nature and center around a group of small wealthy individuals enriching themselves at the expense of the less wealthy individuals across the world. We also find that zero-sum thinking is linked with empathy and understanding for the January 6, 2021 attack on the U.S. Capital Building, an act that is more justifiable and seen as being 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 and are found within both parties.

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

The final part of our analysis turns to the question of the origins of variation in zero-sum thinking within the United States. We find that, consistent with the notion that a zero-sum psychology is subject to systematic evolutionary forces, the experience of an individual's ancestors affects their zero-sum thinking today. Examining factors that are particularly salient given the history of the United States, we examine the importance of ancestral economic mobility, immigration and enslavement. We find that experienced upward mobility is associated with less zero-sum thinking.

The effect is strongest for upward mobility experienced by themselves and their parents, although upward mobility of grandparents also matters, even if the effect is weaker. Thus, exposure to episodes of economic success and lack of economic scarcity reduces zero-sum thinking.

We also find that a history of immigration to the United States is associated with a weaker zero-sum mentality. The effect is strongest for individuals who migrated themselves, then for children of immigrants, then for grandchildren of immigrants, etc. The experience is one where the individual immigrating and their descendants are made much better off and this is not perceived as coming at the expense of others. In fact, the common perception that the success of the United States is due to a history of immigration suggests that this was a win-win situation that was not zero-sum.

The third factor, ancestral enslavement, is different from the first two since it is a historical environment that is very zero-sum in nature. We find that a history of being exposed to zero-sum environments has the opposite effect of mobility and immigration. We find that if an individual's ancestors were enslaved, then they have a more zero-sum view today. This is true not only for individuals who are black (and with individuals who experienced chattel slavery) but also for other populations who experienced other forms of enslavement, such as indentured servitude, internment, force reservation, or the Holocaust.

Our findings add to a small literature in cross-cultural psychology that seeks to quantify and better understand the psychology of zero-sum thinking. Rozycka-Tran, Boski and Wojciszke (2015) introduce what they view as a novel 'social 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 is negatively associated with individualism and positively associated with collectivism, and it is negatively associated with measures of economic development. Davidai and Ongis (2019) study how politics interact with zero-sum thinking, which they measure with a survey question. They find that there is not an unconditional relationship between political affiliation and zero-sum thinking. Depending on the context of the question being asked – e.g., economic, racial, immigration-related, etc – sometimes more politically liberal individuals exhibit more zero-sum thinking and sometimes more politically conservative individuals do.

Within economics some studies have make progress on Foster's work in a more macro setting. Carvalho et al. (2022) provide an evolutionary model show how a more zero-sum environment

can result in 'demotivating beliefs' that reduce effort. They show that when the world is zero-sum, effort exerts a negative externality on others, which allows for the emergence and proliferation of zero-sum beliefs that are socially beneficial. They document empirically, using both field experiments in the Democratic Republic of the Congo and cross national data, a link between zero-sum and demotivating beliefs such as witchcraft (rather than Christianity) and jealousy (in the DRC) and no religious beliefs (rather than Christianity) and less focus on the inherent value and importance of work and economic success (cross nationally).

The remainder of the paper is structured as follows. Section 2 describes the survey design and data collection.

2. Survey Design and Data Collection

A. *Data Collection*

Our sample comprises approximately 14,500 respondents collected during five waves of surveying between October 2020 and May 2022. The survey is approximately 20 to 30 minutes in length, depending on the individual respondent and the wave, and was completed online with participants recruited through an online survey company, *Dynata*.

To arrive at our analysis sample, we drop individuals who did not complete the full survey and, of those, the 1.7 percent who spent less than 10 minutes on the survey. Table 1 shows descriptive statistics for this group and shows that they are similar to the broader U.S. population.[1]

a. Survey Flow

For all respondents, we first ask about the respondent's own demographic information (such as TK and TK) and political views (such as TK). Then, we randomize the sequence of the survey modules: half of the respondents are asked to answer questions about their ancestry, own and family involvement with the U.S. military, exposure to slavery, and family relative income across time first. The other half is asked first about perceptions and opinions, including views about redistribution, race, affirmative action, among other policy views.

Figure TK shows a block diagram of the survey flow.

[1] Appendix Figure A1 shows distributions of survey duration by wave and Appendix Table A1 shows statistics about survey attrition.

B. *Ancestry Questions*

For each of the respondent's six 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 like education, occupation, and relative economic standing.

For the respondent and their ancestors, we collect information on the specific city of residence at different points in their life, e.g., while growing up, in 20s, in 30s, etc. Although we only collect information about 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 for where the respondent's great grandparents were living in their 20s, 30s, and 40s. Similarly, we ask our respondents the economic conditions in the grandparents household when they were young. This provides some information about the economic conditions of the respondents great grandparents early in their adult life. Thus, effectively we are able to collect information over four generations.

C. *Measuring Zero-Sum Thinking*

Our baseline measure of zero-sum is based on four questions. Each asks respondents to consider a statement and then to report the extent to which they agree with the statement.

- **Ethnic**: "If an ethnic group becomes richer, this comes at the expense of other groups."
- **Citizenship**: "If non-U.S. citizens do better economically, this is at the expense of U.S. citizens."
- **Trade**: "If a country makes more money, then another country makes less money."
- **Income**: "If one income class becomes wealthier, it is at the expense of other classes."

After each statement is reported, respondents then choose one of the following five options: (1) Strongly disagree, (2) Disagree, (3) Neither agree nor disagree, (4) Agree, (5) Strongly agree. We assign each answer the integer value indicated, creating measures that are increasing in how zero-sum a respondent's view is.

The distribution of the answers is shown in Figure 1. As shown, we see significant variation in our sample with distributions that appear fairly bell shaped.

Table 1: Sample Characteristics

	U.S. Population	Survey
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	0.38
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		14,492

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).

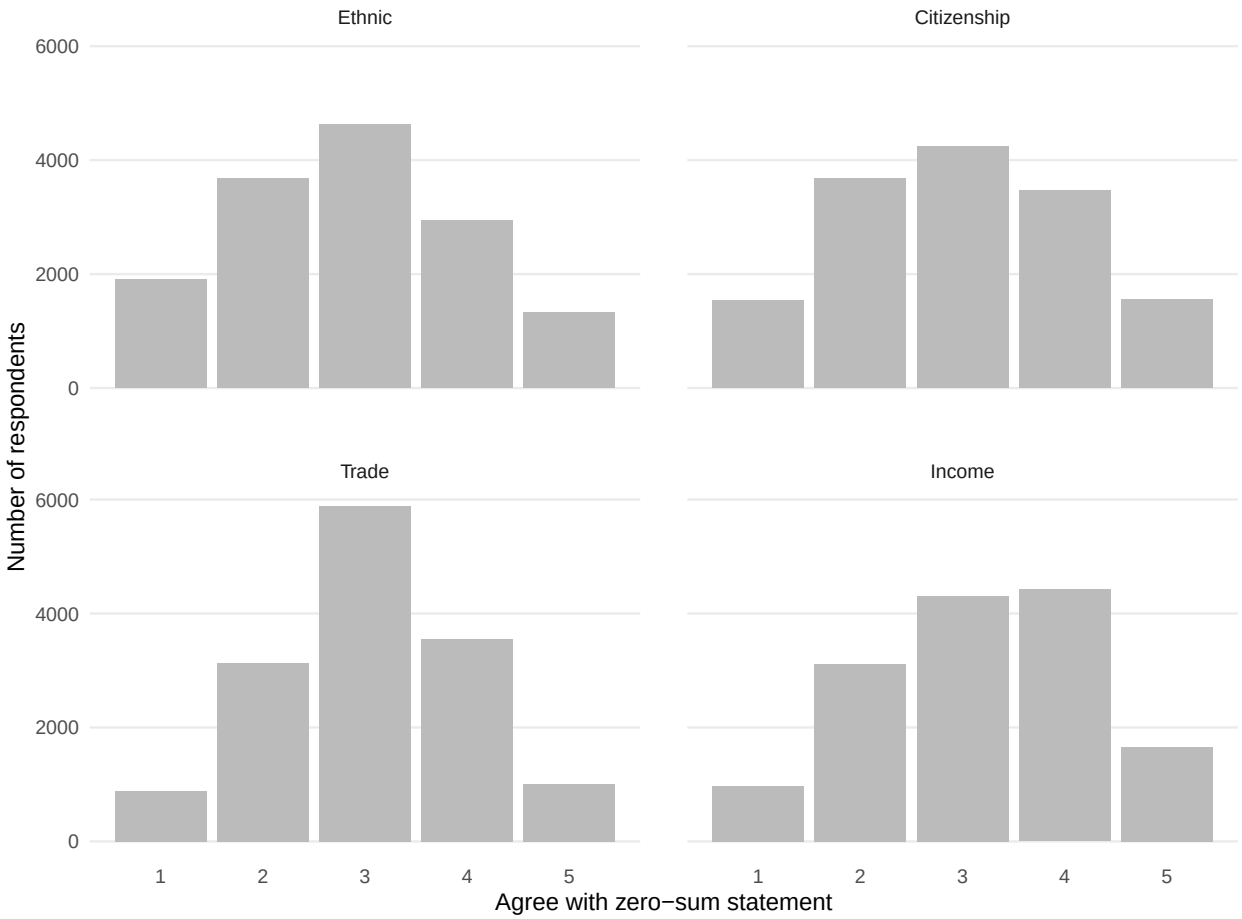


Figure 1: Distributions of responses to zero-sum questions

The extent to which a person's view is zero-sum is highly correlated across domains, with the correlation coefficients ranging from 0.25 to 0.56. If we examine the factors underlying the variation of the four measures using principal components analysis, we find that the first component of the data is a factor that loads positively on each of the four measures. The weights are between 0.52 and 0.55 for all variables except for the citizenship statements where the weight is slightly lower at 0.39. This is likely explained by the political sensitivity of the citizenship issue in the United States, which is an additional factor that influences respondent's answers.

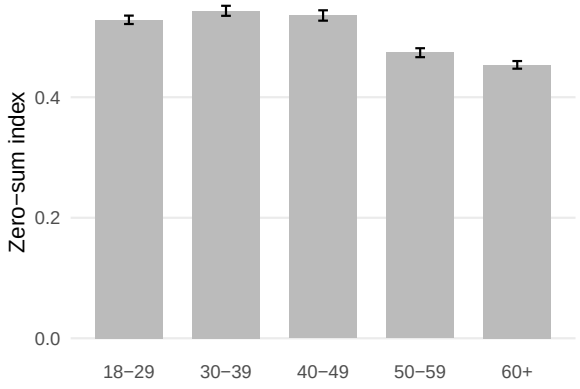
The estimates that we report here use the first principal component from a factor analysis of the four zero-sum measures to create an aggregate measure that we then normalize to range from zero and one. The estimates are virtually identical if we use an equally weighted average rather than the first principal component and/or if we also exclude the citizenship measure, which one might be worried is particularly influenced by the political views of the responents.

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

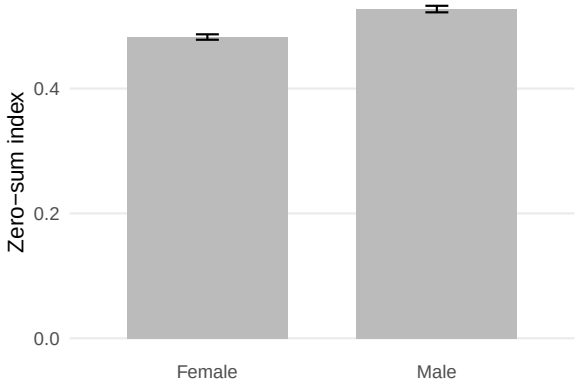
Figure 2 shows how the average of the zero-sum measure varies across demographic groups. First, older respondents tend to be less zero-sum, though we are unable to disentangle age from cohort effects in this sample. Second, men tend to be more zero-sum than women, which is accords with Foster ()

Third, Black and Hispanic respondents tend to be more zero-sum than white respondents. 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, with more Republican individuals exhibiting less zero-sum thinking.

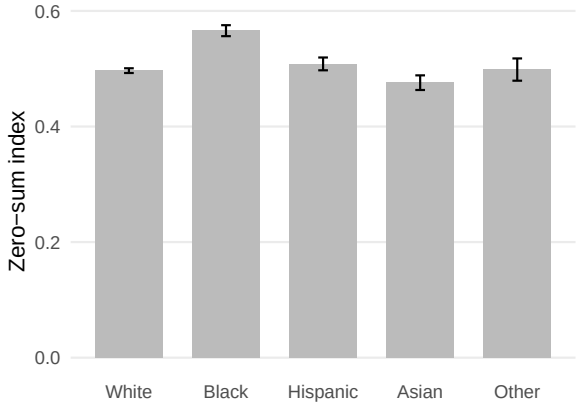
Figure 3 shows the average zero-index by the respondent's current state of residence and their birth state, indicating that there are no clear regional patterns. Respondents born in Utah exhibit the least zero-sum thinking, on average, and respondents born in South Carolina exhibit the most, but there is no significant geographic clustering.



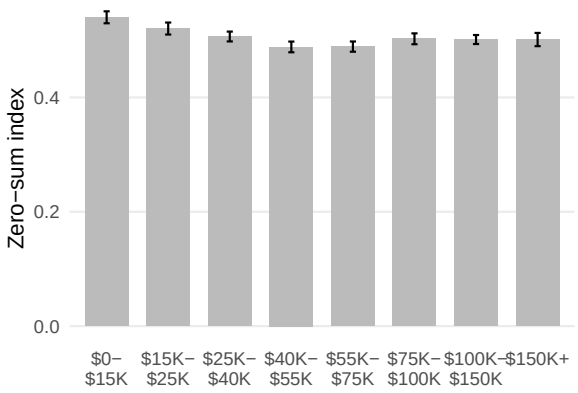
(a) Age



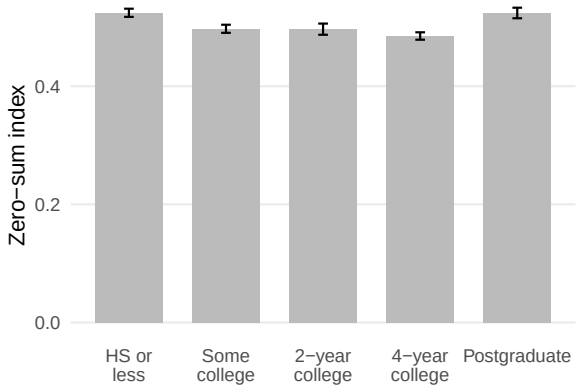
(b) Gender



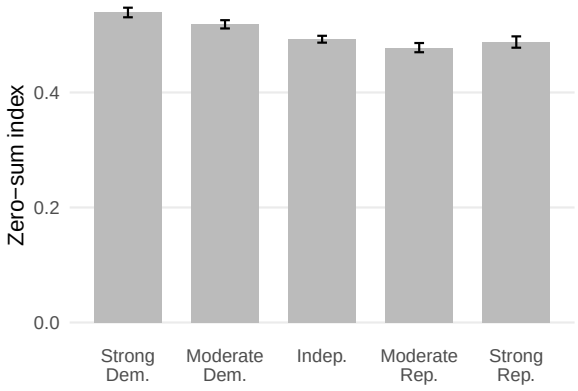
(c) Race



(d) Household income



(e) Education



(f) Party

Figure 2: Average zero-sum index by demographic group

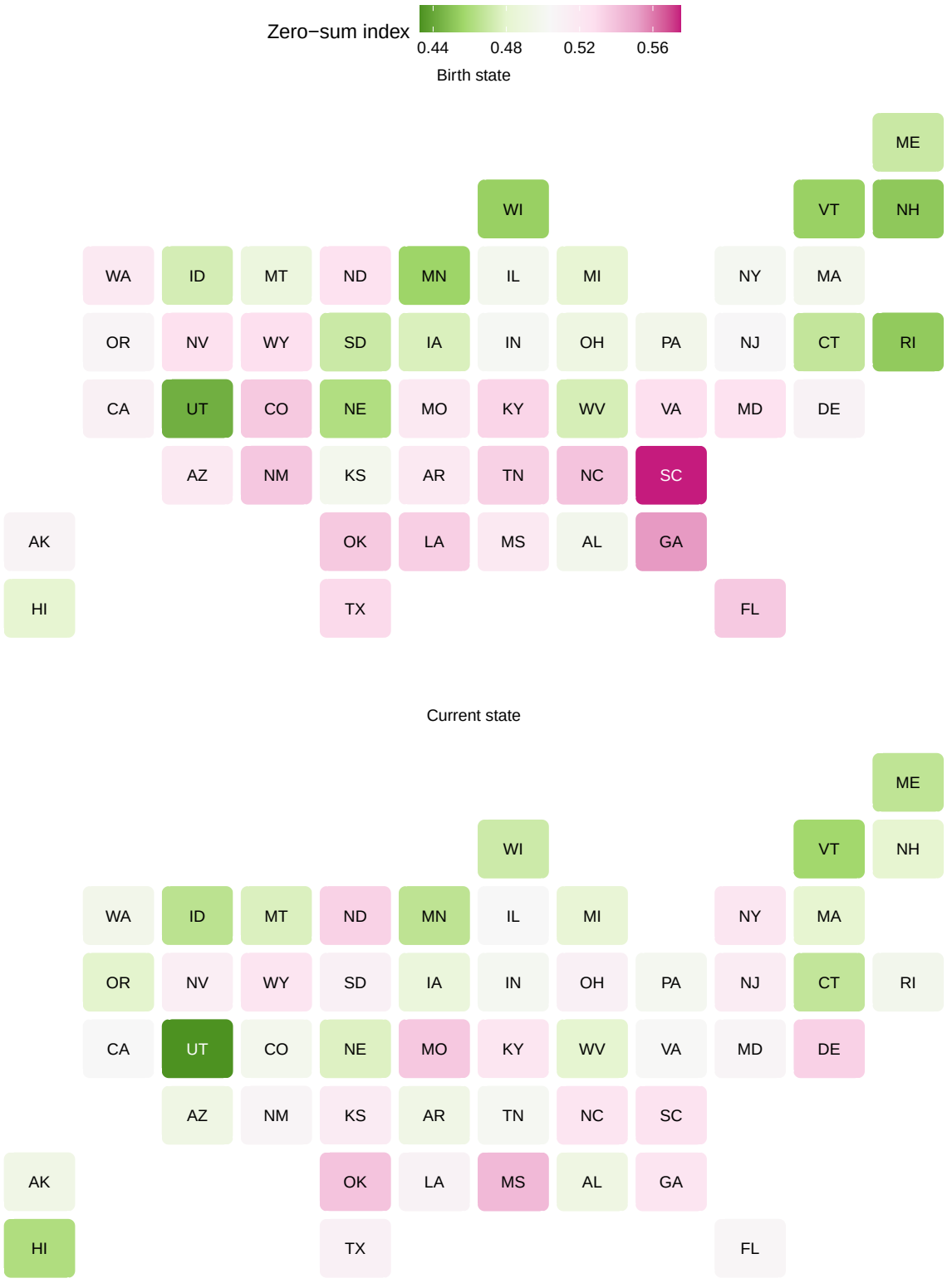


Figure 3: Average zero-sum index by state

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:

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

where i indexes individuals, s state of residence. Zero Sum_i is our measure of zero-sum thinking for individual i. $\alpha_{s(i)}$ denotes state-of-residence fixed effects. Y_i denotes an outcome of interest.

Political Preferences

We begin by considering one's views about policy and their political affiliation. In particular we examine the left-right dimension. We ask individuals about the extent to which their policy views and political views are liberal (Democratic) or conservative (Republican).

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, assuming a decreasing marginal utility of income, there is 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 of the world is not zero-sum, then the income and wealth of the rich did not come at the expense of others. In this case, taxing the wealth and redistributing it through various policies is unfair and might discourage effort which would be detrimental to economic growth. Thus, optimal policy is very different depending on whether one implicitly views the world as zero-sum or not.

To study this, we measure individual's political affiliation and their policy views with the following two questions.

1.

2.

As we report in Figure 4, in the raw data, we observe a highly significant positive relationship between zero-sum and the likelihood of being a Democrat or having liberal views about economic

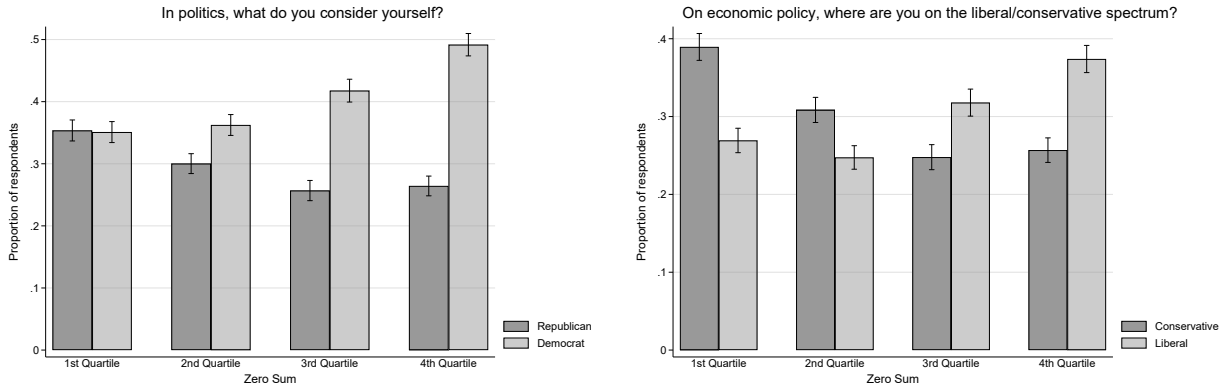


Figure 4: Zero-sum thinking and political affiliation

policy. This also means that we observe a negative relationship between zero-sum and Republican political affiliation and having conservative views about economic policy.

The previous findings suggest that zero-sum affects one's overall political alignment and one's general policy views. Here, we dig deeper into the association with policy by examining the relationship with specific government policy and legislation.

Figure 5 shows correlations with policies

A. *Generality of the 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 individual's 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 of approximately 200,000 respondents across the world, about the extent to which they view wealth as zero-sum. Respondents are given two opposing statements, one that is zero-sum and the other 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 view on a ten point scale, which lies between the two extremes. 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.

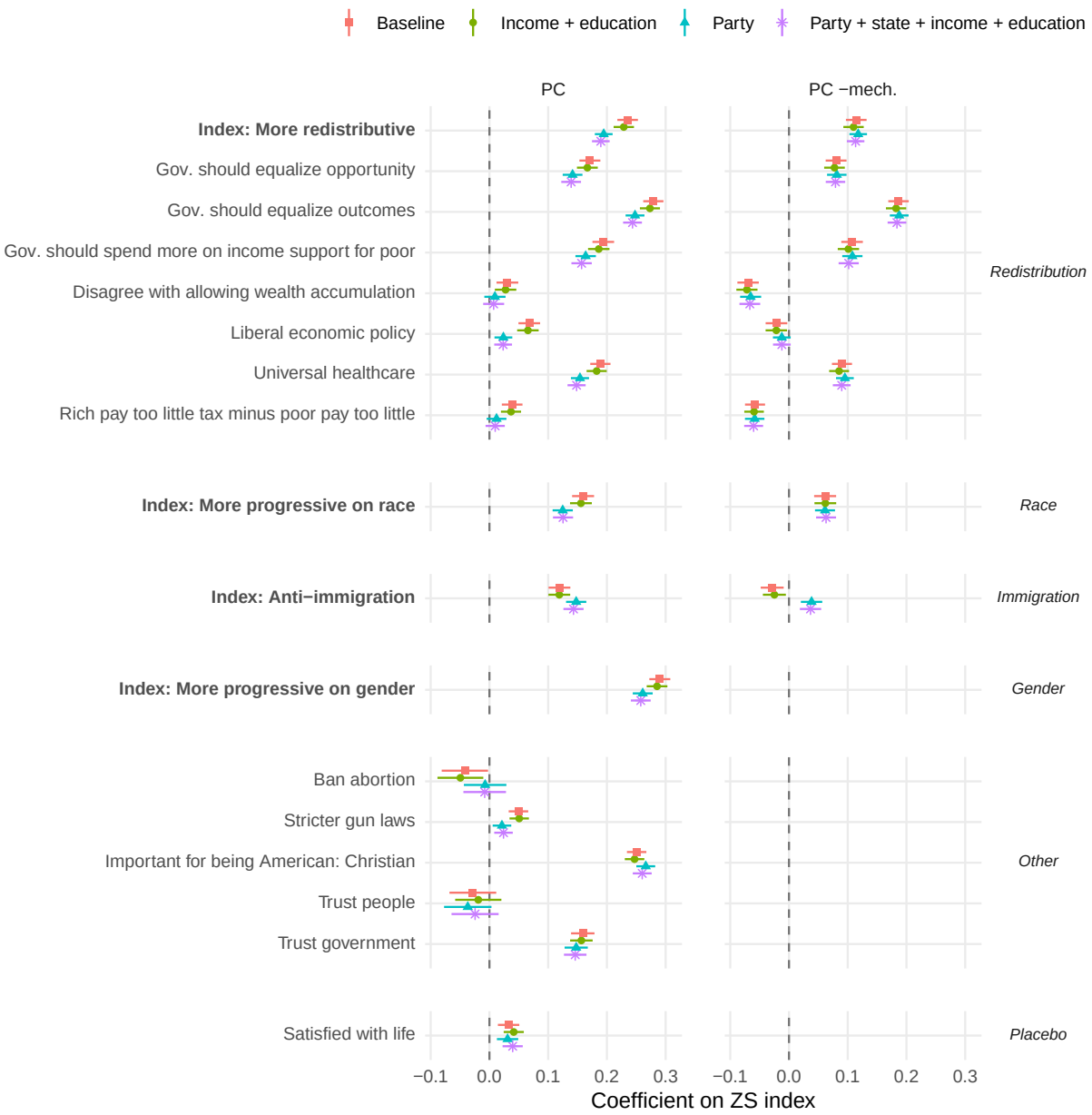


Figure 5: Zero-sum thinking and policy views

Notes: Each coefficient is from a separate regression with controls for age, gender, and their interaction, as well as wave fixed effects. The four estimates for each regression 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. "PC" refers to the first principal component of the four baseline zero-sum questions about income, citizenship, ethnic groups, and trade. "PC minus mechanical" refers to the 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. XX do we describe which questions go into the PC, or refer readers to the Appendix Figure?

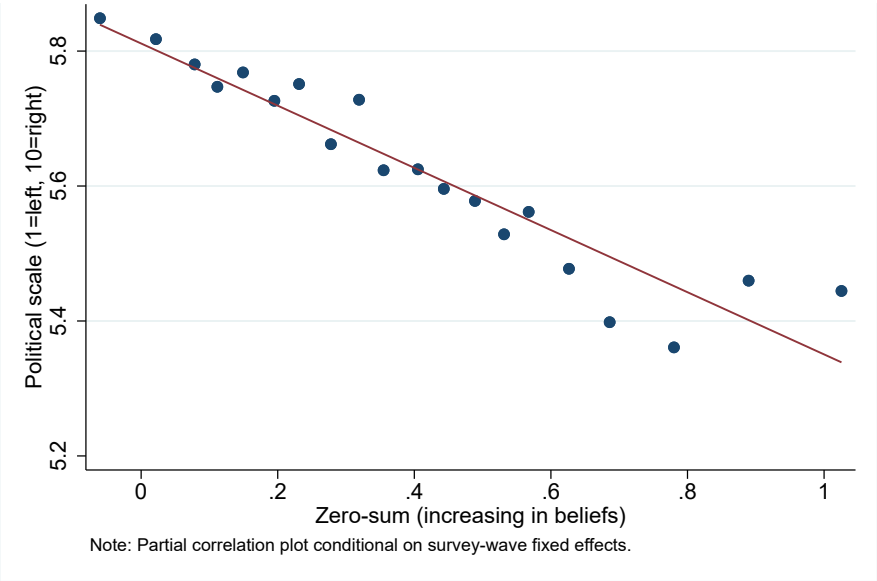


Figure 6: Zero-sum thinking and political affiliation across the world

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).[2]

B. *Zero-Sum and U.S.-Specific Political Events*

The recent history of politics in the United States has witnessed a number of unprecedented events. We now turn to an examination of two of these: the January 6, 2021 attack on the Capital Building and the recent rise in the belief in QAnon, which is a bundle of conspiracy theories, many of which are related to U.S. politics.

January 6th Attack on the Capital

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.

[2]This is variable E033 in WVS.

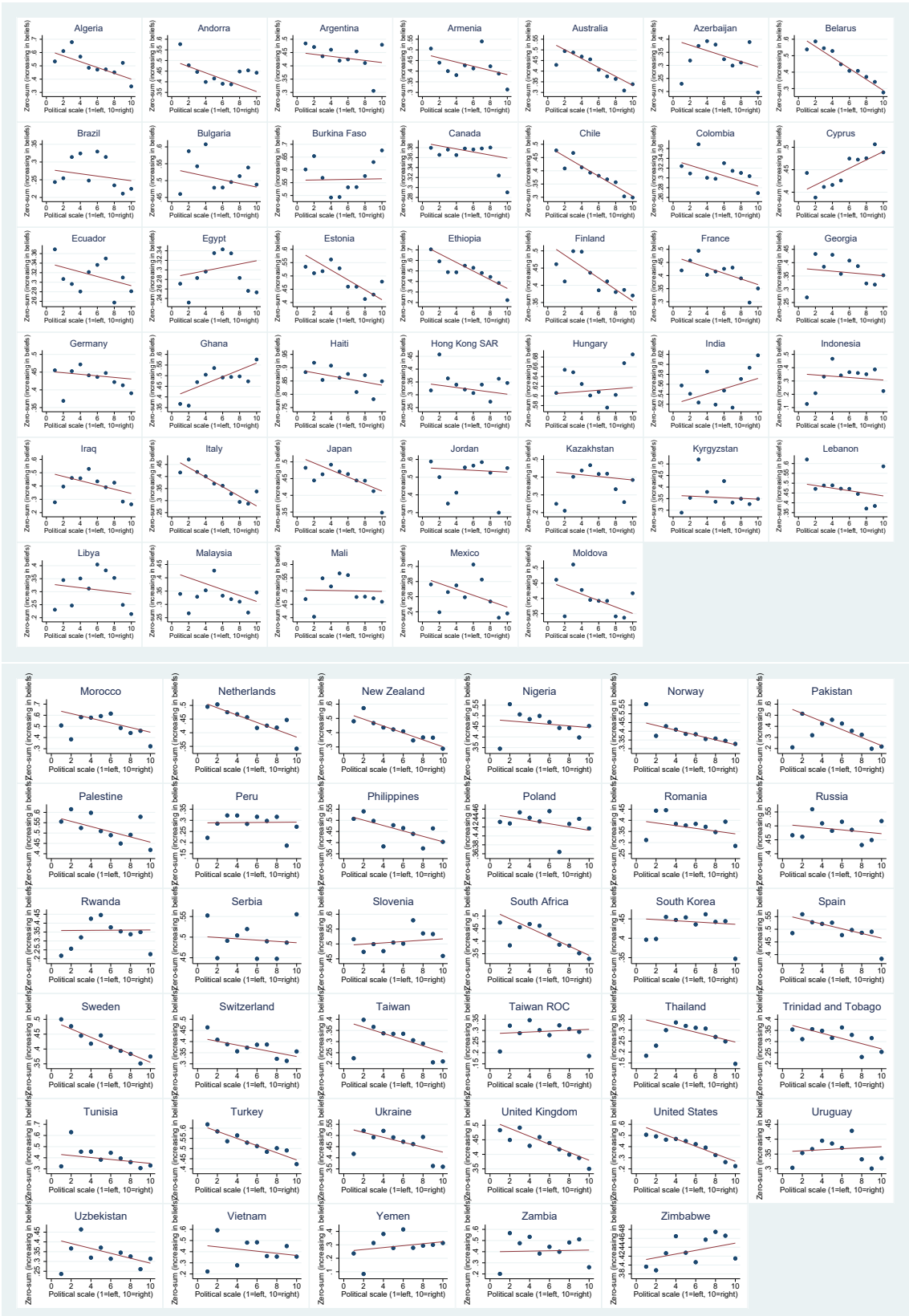


Figure 7: Zero-sum thinking and political affiliation across the world

There are multiple ways of viewing the events of January 6th. Through a non-zero-sum lens, it is 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, a purely zero-sum view is one where everyone is not made worse off (or better off). One party gains at the expense of another party. Thus, it was an attempt by the Republican Party to use whatever tool they could at their disposal 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 have a measure of 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 an individual's measure of zero-sum and their perception of the Capitol attack is shown in Figure 8. The figure shows clearly that individuals with a more zero-sum world view show more sympathy towards the Capitol attackers. If we examine the relationship for Republican and Democratic respondents separately, we find the relationship present in both samples. Thus, the aggregate pattern does not simply reflect the relationship between zero-sum 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 is an important determinant in how one views these events.

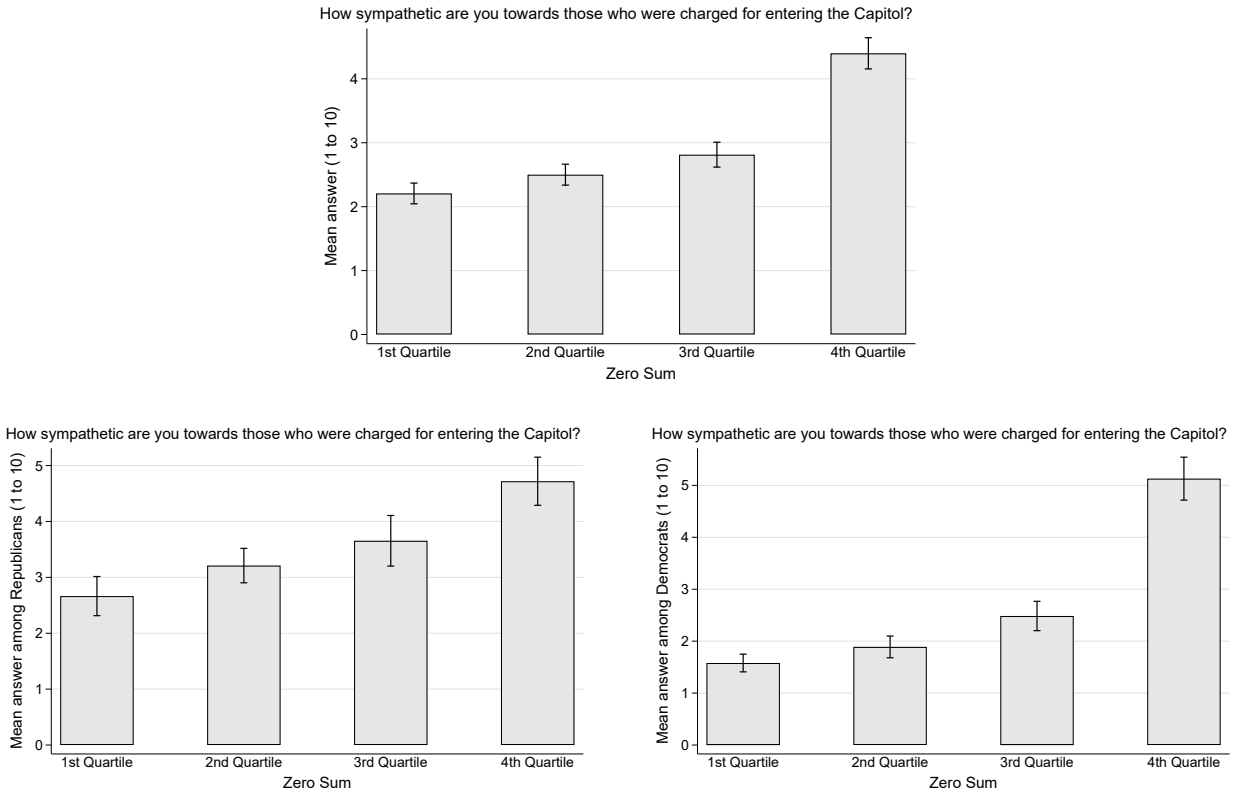


Figure 8: Zero-sum thinking and U.S. political crisis (N =3,000; Feb 2021)

QAnon

A recent important 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 elites, comprising Democratic politicians, Hollywood actors, high-ranking government officials, business tycoons, media figures, and medical experts, who are enriching themselves at the expense of ordinary people. Believers see this cabal as orchestrating a global child sex trafficking ring that engaged in the abuse and satanic sacrifice of children. The Trump administration was trying to stop these activities and to bring those responsible to justice. The movement also espouses a variety of other conspiracies regarding the Kennedy assassinations, UFO's, 9/11, attempts at a coup d'etat directed at the Trump administration, and the imminent collapse of the cabal in an event known as "The Storm", where thousands of cabal members and affiliates would be arrested for their crimes (**?**).

An important aspect of QAnon is that its core beliefs are zero-sum in nature, where one individuals or group of individuals gains at the expense of others. All of the following core beliefs are very zero-sum in nature: (1) The world is ruled by a global elite that conspire behind the scenes to enrich themselves and keep the masses poor; (2) They run a satanic child sex trafficking ring; (3) They were plotting a coup to overthrow Donald Trump. This suggests the possibility that zero-sum thinking and a zero-sum world view are closely associated with QAnon thinking, with the most logical interpretation that a zero-sum psychology (which we will show is rooted in historical factors) is an important factor in explaining whether one finds QAnon intuitive or plausible and believes in its theories.

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 9, which reports the raw relationship between our zero-sum measure and the extent to which individuals feel that "QAnon contains some truths about U.S. politics." The sample is of approximately 3,000 individuals collected in the fourth wave of our survey, which was from February of 2021.

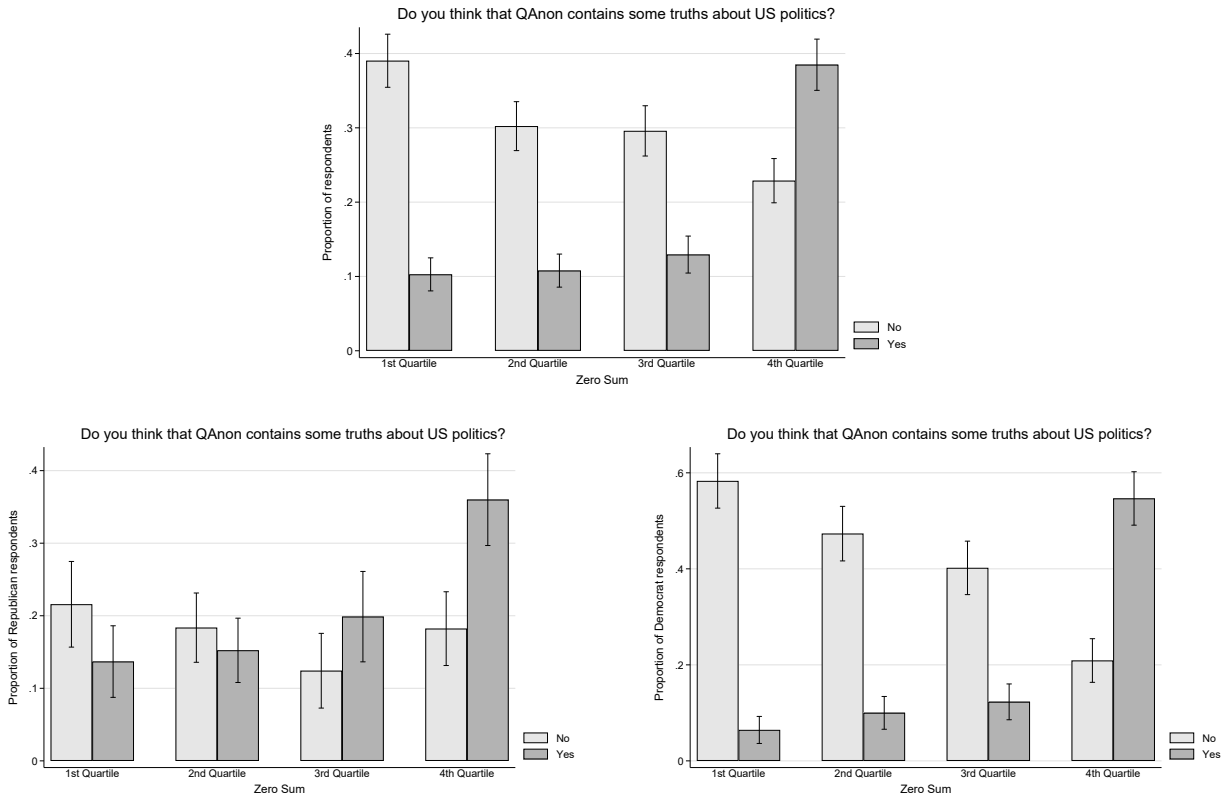


Figure 9: Zero-sum thinking and QAnon beliefs (N =3,000; Feb 2021).

4. The Historical Determinants of Zero-Sum Thinking

We now turn to the question of the determinants of zero-sum thinking. Motivated by logical links between factors that potentially affect how zero-sum an environment is, as well as the factors that are particularly relevant for the U.S context, we focus on economic mobility, immigration, and exposure to 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 other similar industrialized nations (Long and Ferrie, 2013). We expect that individuals who either experienced themselves or whose ancestors experienced upward economic mobility, to have less zero-sum views today. In such historical environments, where there was 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.

Another factor is motivated by the fact that the United States is a nation of immigrants, with immigration being an important feature not only in the economic success of those who immigrated and their descendants, but also in the locations to which they immigrated to (Abramitzky, Boustan and Eriksson, 2014). We expect the experience of immigration to be associated with less zero-sum thinking. This is related to the fact that immigrants typically made a better life for themselves in the United States, experiencing better living conditions. In addition, since immigrants actually improved the economic standing of those around them, in reality, this does not appear to have come at the expense of others (Sequeira, Nunn and Qian, 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 slavery and subsequent racial tensions permeates the social and political fabric of American society. Slavery is an economic and social system that is nearly fully zero-sum. An enslaved individual has their resources taken by the slave owner. Slave owners and their masters 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 slavery or experienced the aftermath of slavery to have views that are more zero-sum.

While slavery is an extreme form of coercion, we might expect similar effects on zero-sum

thinking for other forms of enslavement. In the U.S. context, there are many examples of this, including the internment of Japanese populations during WWII, the forced displacement of indigenous populations and the placement of children in residential boarding schools, and the indentured servitude of immigrant labor. While not directly relevant to the history on U.S. soil, imprisonment during the holocaust is an important event that is potentially relevant for the ancestors of many U.S. citizens today. These share the same basic features as slavery and we expect all of these events to also result in a more zero-sum view of the world.

Estimating equation

We begin by first considering the determinants of zero-sum thinking that emerge from one's own experience or through vertical transmission from that of your ancestors.

The equations we estimate take the following form:

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

where i indexes survey respondents and s indexes their state of residence. The variable Own 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 parents and grandparents or include a measure for each individual. These measures are intended to test for vertical transmission, namely, that experiences of ancestors have effects that are transmitted to children and can persist for multiple generations.

The vector $\mathbf{X}_{i,c,t}$ includes the following controls: individual i's age, age squared, an indicator for their gender, and its interaction with age and age squared. We also include race fixed effects $\alpha_{r(i)}$ and state of residence fixed effects $\alpha_{s(i)}$.

A. ***Channels of Influence: Vertical, horizontal and oblique transmission of zero-sum thinking***

An important question when examining whether historical factors affect contemporary cultural views is what is the key mode of transmission. It is possible that one's views are shaped mostly by the cultural experiences and beliefs of one's direct ancestors, so that culture follows a vertical channel of transmission. It is also possible that individuals learn mostly from their cohorts

and the environment that they are exposed to during formative years. This horizontal type of cultural transmission implies that the socioeconomic characteristics of one's environment will shape one's zero-sum thinking. Lastly, cultural transmission can occur through oblique channels, as individuals learn from older generations.

Economic mobility

The first factor that we consider is one that is particularly salient for the United States. This is 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, which was 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 could then be transmitted to one's children and grandchildren.

Vertical effects

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 HH / 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 HH / 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 HH / 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:

Table 2: Zero-Sum Thinking and Ancestral Economic Mobility, Part I

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Dependent variable: Zero Sum Index, 0-1								
Respondent's Lifetime Mobility	-0.0119***	-0.0120***	-0.0119***						
	(0.00138)	(0.00138)	(0.00138)						
Parent's Lifetime Mobility				-0.0123***	-0.0122***	-0.0120***			
				(0.00167)	(0.00167)	(0.00166)			
Grandparent's Lifetime Mobility							-0.00904***	-0.00882***	-0.00968***
							(0.00254)	(0.00254)	(0.00253)
Demographic controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
State fixed effects	N	Y	Y	N	Y	Y	N	Y	Y
Race fixed effects	N	N	Y	N	N	Y	N	N	Y
R squared	0.045	0.053	0.064	0.049	0.057	0.069	0.057	0.065	0.077
Observations	13,920	13,920	13,920	12,187	12,187	12,187	9,218	9,218	9,218
Mean of dep. variable	0.51	0.51	0.51	0.51	0.51	0.51	0.52	0.52	0.52
Std. dev. of dep. variable	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22

Notes : The table reports OLS estimates. An observation is an individual. The dependent variable is an index for zero sum thinking that ranges from 0-1. `Demographic controls' include age, age squared, and their interaction with gender indicators. The life mobility variables measure the increase in economic standing experience by a generation from the household they grew up in to their household as adults. See text for finer details. Coefficients are reported with standard errors in parantheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

Respondents choose between the following options: (1) Far below average; (2) A little below average; (3) Average; (4) A little above average; (5) Far above average. The respondent can also choose "I don't know." We assign answer the integer values listed, constructing measures that are increasing in relative economic wellbeing. When responses are "I don't know," we code these as missing.

From these measures we calculate the economic mobility experienced by each generation. For the respondent themselves, their experienced mobility is the difference between their current economic status and their status growing up: $1-2$. This is variable $Own\ Experience_i$ in equation (**??**). For the respondent's parent, their experienced mobility is the difference between their household income as an adult and when they were growing up: $2-3$. This is $Parents\ Experience_i$. For the respondent's grandparent, their experienced mobility is the difference between their household income as an adult and when they were growing up: $3-4$. This is $Grandparents\ Experience_i$.

Estimates are reported in Table 2. We begin by examining each of our three measures of mobility individually. For each, we report three specifications: without state of residence and race fixed effects, with state fixed effects included, and then with race fixed effects also included. We see that all three coefficients capturing exposure to upward mobility are negative and statistically significant. Improvements in one's economic standing or in that of one's ancestors are associated with a less zero-sum view of the world.

Columns 1–3 of Table 3 report the same estimates but with all three mobility measures included simultaneously. Interestingly, we find that the estimated effects are all larger compared to the

Table 3: Zero-Sum Thinking and Ancestral Economic Mobility, Part II

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: Zero Sum Index, 0-1					
Respondent's Lifetime Mobility	-0.0219***	-0.0221***	-0.0221***			
	(0.00197)	(0.00198)	(0.00197)			
Parent's Lifetime Mobility	-0.0279***	-0.0278***	-0.0279***			
	(0.00227)	(0.00228)	(0.00227)			
Grandparent's Lifetime Mobility	-0.0206***	-0.0204***	-0.0213***			
	(0.00268)	(0.00269)	(0.00267)			
Grandparent to Respondent Mobility				-0.0229***	-0.0230***	-0.0232***
				(0.00161)	(0.00161)	(0.00161)
Demographic controls	Y	Y	Y	Y	Y	Y
State fixed effects	N	Y	Y	N	Y	Y
Race fixed effects	N	N	Y	N	N	Y
R squared	0.077	0.085	0.097	0.075	0.083	0.095
Observations	9,155	9,155	9,155	9,300	9,300	9,300
Mean of dep. variable	0.52	0.52	0.52	0.52	0.52	0.52
Std. dev. of dep. variable	0.22	0.22	0.22	0.22	0.22	0.22

Notes: The table reports OLS estimates. An observation is an individual. The dependent variable is an index for zero sum thinking that ranges from 0-1. `Demographic controls' include age, age squared, and their interaction with gender indicators. The life mobility variables measure the increase in economic standing experience by a generation from the household they grew up in to their household as adults. See text for finer details. Coefficients are reported with standard errors in parantheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

estimates when each is included one at a time. Mechanically, upward mobility in a previous generation makes upward mobility more difficult for the next. For example, if past mobility moved a family to the top level of perceived economic wellbeing, then it is impossible for the mobility of subsequent generations to be positive. Given the negative association across the mobility measures, we expect a downward bias in each coefficient when the three measures are not all included in the specification.

According to the estimates, the effect of the respondent's own mobility is of a similar magnitude or even smaller to the effect of the mobility experienced by their parents, while the effect of the grandparent's experience mobility is weaker than the parent's experience. The fact that we don't find a fully monotonic decreasing effect, like we did for immigration, is potentially explained by the fact that the own experience effect isn't quite comparable to the parent's or grandparent's effects. This is because the respondent, depending on their age, hasn't fully realized the upward mobility that they will experience. For this reason, we would expect the effect for the own mobility experience to be lower than it otherwise would be.

The final measure of mobility that we consider is a measure of longer-run mobility that looks at the increase between the respondent's economic wellbeing now and their paternal grandfather's household when they were growing up: $1 - 4$. The estimates are reported in columns 4–6 of Table

2. For the longer-run measure, we obtain estimates consistent with those of the measures for each generation. The estimated magnitude is also very similar, which is reassuring.

Horizontal and oblique effects

To this point our analysis has been one that is centered on vertical transmission, where the direct experience of one's ancestor's affects their views. However, it is possible that the experience of someone from the previous generation can affect the respondent even if they are unrelated. For example, the mobility experienced by the friends of the respondent's parents could impact the respondent. They could have affected the views of the respondent during their childhood (oblique transmission) or they could have affected the views of the parents (horizontal transmission) and the parents then transmitted these to the respondent (vertical transmission).

We estimate these effect using equation (2), but using experience measures (own, parents, and grandparents) that reflect the broader environment in which they live rather than the specific experiences of themselves. Rather than measuring upward mobility of the respondent, their parents, and their grandparents, we measure the amount of upward mobility experienced by the population in the county of residence of the respondent, their parents, and their grandparents.

To measure the economic conditions experienced by a person or their ancestor in their formative years, we calculate the average level of the unemployment rate in the county where they grew up over that period. Specifically, for respondents, we use the average unemployment rate in the county where they spent ages 10 to 19 over those years, and for their parents and grandparents, we use the average unemployment rate in the county where they "primarily grew up" (ages 7 to 17) over those years. Unemployment data is from the decennial Census for 1940, 1950, and 1970 and from the Bureau of Labor Statistics annually from 1976 to 2021, and is linearly interpolated between years within each county.[3]

To calculate these average unemployment levels, we need to know each individual's year of birth. Because we only asked about ancestors' years of birth in waves 4 and 5 of our survey (and because respondents do not always complete these questions), we predict ancestors' years of birth

[3]We thus drop observations for individuals whose ancestors grew up before 1940.

for most respondents – about 62% of parents and about 70% of grandparents.[4] To do so, we use a linear regression of, for example, the respondent's father's year of birth on a series of fixed effects for: the respondent's year of birth (in 5-year bins), whether they were born in the United States, their gender, race, education, household income, marital status, whether their parents are or were divorced, whether their father was born in the United States, and their father's education. We estimate this regression for the sample in which the respondent directly reported their father's year of birth. Then, we use this regression to predict father's year of birth for all respondents. We also do this for the respondent's mother and all four grandparents. In calculating exposure to unemployment, we use the year of birth information directly reported by the respondent, if available (for waves 4 and 5), and the predicted year of birth if not. In all regressions, we include controls for whether the ancestor or ancestors' years of birth are predicted.

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

Vertical effects

Estimates of equation (2) with immigration as the independent variable of interest are reported in Tables 4 and 5. Table 4 reports estimates with each of the three immigration measures – the

[4]We recode as missing a parent's year of birth as reported by the respondent if it is less than 12 years before or more than 80 years after the respondent's year of birth. Likewise, we recode as missing a grandparent's year of birth as reported by the respondent if it is less than 24 years before or more than 160 years after the respondent's year of birth.

Table 4: Zero-Sum Thinking and Immigration, Part I

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Dependent variable: Zero Sum Index, 0-1								
Respondent Immigrated	-0.0468***	-0.0466***	-0.0359***						
	(0.00643)	(0.00649)	(0.00706)						
Parents Immigrated				-0.0344***	-0.0339***	-0.0260***			
				(0.00589)	(0.00600)	(0.00636)			
Grandparents Immigrated							-0.0112**	-0.00948*	-0.00602
							(0.00534)	(0.00538)	(0.00537)
Demographic controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
State fixed effects	N	Y	Y	N	Y	Y	N	Y	Y
Race fixed effects	N	N	Y	N	N	Y	N	N	Y
R squared	0.040	0.047	0.057	0.041	0.048	0.058	0.039	0.046	0.058
Observations	14,835	14,835	14,835	11,712	11,712	11,712	11,638	11,638	11,638
Mean of dep. variable	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Std. dev. of dep. variable	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21

Notes: The table reports OLS estimates. An observation is an individual. The dependent variable is an index for zero sum thinking that ranges from 0-1. `Demographic controls' include age, age squared, and their interaction with gender indicators. The immigrant variables are an indicator that equals one if a person themselves was born outside of the U.S., respondent was born in the U.S. but at least one parent was born outside the U.S., or respondent and parent were born in the U.S. and at least one grandparent was born outside the U.S.. Coefficients are reported with standard errors in parantheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

respondent, their parents, or their grandparents – included one at a time. For each variable, we report three specifications. The first includes the demographic controls only, the second adds state fixed effects, and the third adds race fixed effects.

Tables 5 reports estimates where the three immigration measures are included simultaneously. In all specifications, we include the measure of whether the respondent themselves is an immigrant, defined as whether they were born outside of the U.S. In columns 1–3, we also include an indicator that equals one if at least one of the parents was an immigrants, and in columns 4–5, we additionally include an indicator that equals one if at least on 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 immigration to a high income country being a life-changing event where the individual was made better off with no obvious detriment to others. It is expected that this would make a person less zero-sum. As we did with mobility, here too we find that when we include the variables individually, the estimates tend to be attenuated towards zero, which is due to the negative association between the immigration measures.

Taking the estimates of Table 5 as more accurate, we find that estimate of β_i ranges from -0.035 to -0.040, which is equal to about 20% of the standard deviation and 6% of the mean. We expect the effect of the immigration experience of parents 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

Table 5: Zero-Sum Thinking and Immigration, Part II

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: Zero Sum Index, 0-1					
Respondent Immigrated	-0.0545***	-0.0556***	-0.0503***	-0.0568***	-0.0581***	-0.0522***
	(0.00730)	(0.00740)	(0.00837)	(0.00737)	(0.00748)	(0.00848)
Parents Immigrated	-0.0389***	-0.0397***	-0.0376***	-0.0395***	-0.0408***	-0.0388***
	(0.00590)	(0.00603)	(0.00664)	(0.00593)	(0.00606)	(0.00667)
Grandparents Immigrated				-0.0150***	-0.0144***	-0.0103*
				(0.00535)	(0.00540)	(0.00541)
Demographic controls	Y	Y	Y	Y	Y	Y
State fixed effects	N	Y	Y	N	Y	Y
Race fixed effects	N	N	Y	N	N	Y
R squared	0.045	0.053	0.061	0.047	0.054	0.063
Observations	11,712	11,712	11,712	11,638	11,638	11,638
Mean of dep. variable	0.51	0.51	0.51	0.51	0.51	0.51
Std. dev. of dep. variable	0.21	0.21	0.21	0.21	0.21	0.21

Notes : The table reports OLS estimates. An observation is an individual. The dependent variable is an index for zero sum thinking that ranges from 0-1. `Demographic controls' include age, age squared, and their interaction with gender indicators. The immigrant variables are an indicator that equals one if a person themselves was born outside of the U.S., respondent was born in the U.S. but at least one parent was born outside the U.S., or respondent and parent were born in the U.S. and at least one grandparent was born outside the U.S.. Coefficients are reported with standard errors in parantheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

find. In all specifications, the estimated effects of the parents, β_p, are negative and significant and about 60–65% the size of the individual's own effect. We see a further decay of effects when we examine the grandparents' immigration experience. The estimated effect, β_{gp}, are found to be negative and range from -0.008 to -0.013, which is about 40% of the magnitude of the parents' effect and 25% of the own effect.

In all, we find strong evidence that ancestral migration is associated with less zero-sum thinking and that the effects decay over time so that a more recent history of immigration has a larger effect.

Horizontal and oblique effects

We estimate equation (2) using experience measures – either the repondent's, their parents', or their grandparents' – that reflect the broader environment in which they live rather than the specific experiences of themselves. Rather than measuring whether the respondent, their parents, and their grandparents were first-generation immigrants, we measure the extent to which the county of residence of the respondent, their parents, and their grandparents had populations that were first-generation immigrants, measured as the share of foreign born in a county.

Table 6: Zero-Sum Thinking and County Foreign Share 1860-1920 (Parents and Grandparents)

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county foreign share	-0.0251	0.0037	0.0024						
	(0.0245)	(0.0223)	(0.0222)						
Parents' counties foreign share				-0.0683***	-0.0666***	-0.0477**			
				(0.0225)	(0.0209)	(0.0206)			
Grandparents' counties foreign share							-0.0802***	-0.0872***	-0.0578***
							(0.0213)	(0.0221)	(0.0224)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	12,566	12,566	12,566	11,242	11,242	11,242	8,766	8,766	8,766
R^2	0.039	0.046	0.058	0.045	0.053	0.065	0.048	0.058	0.069
Num. clusters	1,735	1,735	1,735	5,824	5,824	5,824	6,731	6,731	6,731
Dependent variable mean	0.499	0.499	0.499	0.502	0.502	0.502	0.504	0.504	0.504

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

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 that 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.

We begin by focusing on the most important episode of immigration in the recent history of the United State; namely the "Age of Mass Migration". We measure this by taking the average share of the population of a county that is foreign born from each decadal census from 1860 to 1920, as reported in Sequeira et al. (2020). We call this the intensity of immigrant settlement during the Age of Mass Migration.

Estimates of equation (2) are reported in Table A14. 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 in which the respondent was raised. Columns 4–6 report estimates for the same measure but for the counties where the father and mother were raised (the average of the two) and columns 7–8 report estimates for the average of the responent's grandparent's counties.

We find that the connection between a county having a lot of immigrants during the Age of Mass Migration is found for the respondent's parents' and grandparents' locations but not for their own location. The estimated coefficients are negative and significant, suggesting that a larger presence of immigrants is associated with less zero-sum thinking. This finding dovetails

Table 7: Zero-Sum Thinking and County Foreign Share 1860-1920 (Parents and Grandparents, 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	0.0024	0.0071	0.0104						
	(0.0222)	(0.0222)	(0.0225)						
Parents' counties foreign share				-0.0477**	-0.0433**	-0.0410*			
				(0.0206)	(0.0209)	(0.0219)			
Grandparents' counties foreign share							-0.0578***	-0.0573**	-0.0562**
							(0.0224)	(0.0224)	(0.0227)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
2nd generation immigrant		✓	✓		✓	✓		✓	✓
3rd generation immigrant			✓			✓			✓
Observations	12,566	12,564	12,552	11,242	11,242	11,231	8,766	8,766	8,761
R^2	0.058	0.059	0.060	0.065	0.066	0.066	0.069	0.069	0.069
Num. clusters	1,735	1,735	1,735	5,824	5,824	5,822	6,731	6,731	6,726
Dependent variable mean	0.499	0.499	0.499	0.502	0.502	0.502	0.504	0.504	0.504

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

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 that 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.

nicely with the finding that having immigrant ancestors is associated with less zero sum thinking. The findings are consistent with immigrant presence in a county inducing 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 respondents father and paternal grandfather, rather than both parents and all grandparents. The estimates, which are reported in Appendix Table 6, are very similar. We also 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. Appendix Table A15 shows that we obtain very similar estimates in this case.

We next turn to a better understanding of mechanisms. It's possible that our findings reflect vertical transmission of the effects of ancestral immigration on the respondent. This could occur since immigrants often locate where there are other immigrants. To examine this possibility, and better disentangle the different transmission mechanisms, we re-estimate the specifications

while including the measures of whether the respondents own ancestors were immigrants. The estimates are reported in Table 7.[5] We find that our estimated effects of ancestral location of residence are very similar when we control for the respondent's ancestors being immigrants themselves. The estimates remain almost the same magnitude and statistically significant. This suggests that the estimates are not due to the immigrant share in a county be associated with the respondents ancestors being immigrants themselves. Thus, the estimates here are this own-ancestor-immigrant effect and is, thus, felt for those who are not immigrants themselves. This is consistent with horizontal transmission of non-zero-sum beliefs from immigrants to those around them and these values then being passed down to the respondent.

Enslavement

Vertical effects

The final factor that we consider, which is also important given the U.S. historical context, is enslavement. Because of its close tie 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 8, where the omitted racial category is for "European American / White." The estimates show clearly that Black individuals are more zero-sum than any other race. Hispanics are slightly more zero-sum than whites and Asian Americans are even less zero-sum than whites. American Indians and anyone listing another race are about equally as zero-sum as whites.

Race is highly correlated with a host of another factors that might affect one's zero-sum view of the world, including one's educational attainment, income, or even where they live. For this reason, we sequentially add these covariates to the regressions to assess the stability of the racial differences. We find that 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 specification (column 1).

[5]Estimates for the specification where we consider the father and paternal grandfathers specifically are reported in Appendix Table A13.

Table 8: Zero-Sum Thinking and Race

	(1)	(2)	(3)	(4)	(5)
	Dependent variable: Zero Sum Index, 0-1				
African American / Black	0.0644***	0.0618***	0.0619***	0.0582***	0.0601***
	(0.00530)	(0.00542)	(0.00543)	(0.00548)	(0.00645)
American Indian	0.00978	0.00760	0.00724	0.00413	0.0238
	(0.0209)	(0.0210)	(0.0209)	(0.0209)	(0.0250)
Asian / Asian American	-0.0381***	-0.0381***	-0.0358***	-0.0355***	-0.0289***
	(0.00667)	(0.00695)	(0.00697)	(0.00696)	(0.0103)
Hispanic / Latino	-0.00298	-0.00426	-0.00392	-0.00562	-0.00779
	(0.00598)	(0.00619)	(0.00620)	(0.00621)	(0.00789)
Native Hawaiian or Other Pacific Islander	-0.0589*	-0.0543	-0.0527	-0.0567*	-0.0268
	(0.0337)	(0.0340)	(0.0340)	(0.0339)	(0.0421)
Other	-0.00930	-0.00933	-0.0107	-0.0124	-0.0159
	(0.0109)	(0.0109)	(0.0109)	(0.0109)	(0.0131)
Demographic controls	Y	Y	Y	Y	Y
State fixed effects	N	Y	Y	Y	Y
Education fixed effects	N	N	Y	Y	Y
Income fixed effects	N	N	N	Y	Y
Town of residence fixed effects	N	N	N	N	Y
R squared	0.050	0.055	0.060	0.062	0.323
Observations	14,835	14,835	14,835	14,833	13,765
Mean of dep. variable	0.51	0.51	0.51	0.51	0.51
Std. dev. of dep. variable	0.21	0.21	0.21	0.21	0.21

Notes : The table reports OLS estimates. An observation is an individual. The dependent variable is an index for zero sum thinking that ranges from 0-1. The racial categories listed are indicator variables that equal one if the respondent reports being that race. The omitted category is "European American / White." `Demographic controls' include age, age squared, and their interaction with gender indicators. Coefficients are reported with standard errors in parantheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

Table 9: Zero-Sum Thinking and Ancestral Enslavement

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: Zero Sum Index, 0-1							
	Full sample		Black only		Latino, Indigen., Asian, other		White only	
Mean Enslaved Indicator	0.092		0.376		0.074		0.051	
Enslaved Ancestor Indicator	0.0882***	0.102***	0.00940	0.0110	0.0622***	0.0643***	0.160***	0.160***
	(0.00620)	(0.00582)	(0.00992)	(0.0100)	(0.0150)	(0.0152)	(0.00914)	(0.00917)
Demographic controls	Y	Y	Y	Y	Y	Y	Y	Y
Race fixed effects	Y	Y	n/a	n/a	Y	Y	n/a	n/a
State fixed effects	N	Y	N	Y	N	Y	N	Y
R squared	0.065	0.065	0.009	0.039	0.033	0.049	0.081	0.089
Observations	14,501	14,501	1,652	1,652	2,761	2,761	10,088	10,088
Mean of dep. variable	0.51	0.51	0.57	0.57	0.50	0.50	0.50	0.50
Std. dev. of dep. variable	0.21	0.21	0.19	0.19	0.20	0.20	0.21	0.21

Notes: The table reports OLS estimates. An observation is an individual. The dependent variable is an index for zero sum thinking that ranges from 0-1. `Demographic controls' include age, age squared, and their interaction with gender indicators. The Enslave Ancestor indicator equals one if a person reports having an ancestor who was enslaved at any point during the ancestor's lifetime. Coefficients are reported with standard errors in parantheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels.

The data appear to show that Black Americans have a much more zero-sum view of the world. The most natural explanation behind this is that the ancestors of Black Americans were often enslaved individuals. Slavery was a relationship between slave owner and slave 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.

To increase our understanding of this issue, in the survey, we asked respondents if any of their ancestors had been enslaved and if they had, to describe who. The forms of enslavement listed 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 factor of interest is an indicator variable 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 9. To extract from race, in all specifications, we include race fixed effects. In the even-numbered columns, we include state fixed effects while the odd-numbered columns do not. Columns 1 and 2 report estimates for the full sample. We see a strong positive relationship that is highly significant. In columns 3–8, we report estimates for three groups: (1) Black people only, (2) White only, and (3) Latino, Indigenous, Asian, and other. We estimate positive and significant coefficients for all three groups.

Horizontal and oblique effects

Having examined the effect that a history of enslavement has on a respondent's zero-sum views, we now turn to the question of whether the environment in which a respondent's ancestors were raised also matters. Thus, rather than measuring whether ancestors of a respondent were enslaved, we measure extent to which the county of residence of the respondent, their parents, and their grandparents relied on enslaved labor during the antebellum period, as measured by the share of the population that was enslaved in 1860. In doing this, we focus specifically on enslavement of African Americans, which is one of the major (although not only) episodes of enslavement in U.S. history.

Estimates are reported in Table 10, where we report estimates of the association between the 1860 share enslaved in the county the respondent grew up in and their degree of zero-sum thinking today. Column 1 reports estimates with only the demographic controls and survey wave fixed effects. In column 2, we additionally control for race fixed effects, and in column 3 we control for state of residence fixed effects. We find that growing up in a county that historically had more slavery tends to be associated with more zero-sum views today. All estimates are positive and significant at conventional levels.

We also report similar estimates, but measuring the historical prevalence of slavery in the county in which the respondent's parents were raised (column 4–6) and their grandparents raised (columns 7–9). We observe the same pattern for the respondent's ancestors. The historical slave use of the county in which the respondent's parents and grandparents grew up tends to be positively correlated with zero-sum thinking today, although the relationship is not robust to accounting for state fixed effects.

In the analysis, we have examined ancestry by taking an average of the two parents or the four grandparents. To check the sensitivity of our findings to the creation of an average measure, we also examine the average of the shares of enslaved people in the counties of the respondent's father and paternal grandfather. As we report in Table 11, we obtain qualitatively identical estimates when we do so.

We now turn to an examination of our estimates by the race of the respondent. For those descended from African-Americans the ancestral treatment is very different from those who, for example, descend from ancestors who were white. We examine this in Table 12 by re-estimating our specification that includes our full set of covariates including state fixed effects. We report

Table 10: Zero-Sum Thinking and Growing Up in Slave Counties: Combining Parents' and Grandparents' Exposure

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county enslaved share	0.0536***	0.0575***	0.0360**						
	(0.0129)	(0.0157)	(0.0156)						
Parents' counties enslaved share				0.0820***	0.0917***	0.0491***			
				(0.0129)	(0.0150)	(0.0154)			
Grandparents' counties enslaved share							0.0816***	0.0946***	0.0414**
							(0.0141)	(0.0160)	(0.0171)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	13,118	13,118	13,118	11,578	11,578	11,578	9,003	9,003	9,003
R^2	0.040	0.047	0.057	0.049	0.056	0.066	0.051	0.060	0.070
Num. clusters	1,836	1,836	1,836	5,972	5,972	5,972	6,899	6,899	6,899
Dependent variable mean	0.499	0.499	0.499	0.502	0.502	0.502	0.505	0.505	0.505

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. "Share enslaved" 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 that 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.

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

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county enslaved share	0.0536***	0.0575***	0.0360**						
	(0.0129)	(0.0157)	(0.0156)						
Father's county enslaved share				0.0679***	0.0686***	0.0303*			
				(0.0141)	(0.0164)	(0.0169)			
Grandfather's county enslaved share							0.0586***	0.0742***	0.0358*
							(0.0169)	(0.0193)	(0.0200)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	13,118	13,118	13,118	10,353	10,353	10,353	6,418	6,418	6,418
R^2	0.040	0.047	0.057	0.049	0.058	0.068	0.058	0.073	0.082
Num. clusters	1,836	1,836	1,836	1,984	1,984	1,984	1,762	1,762	1,762
Dependent variable mean	0.499	0.499	0.499	0.502	0.502	0.502	0.512	0.512	0.512

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. "Share enslaved" 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 that 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.

estimates for white individuals, Black individuals and for all others which includes Latino, Asian, Indigenous, and other groups. We find that the estimates are driven by respondents who are white and we do not find effects for other groups. An important caveat is that this group is by far the largest racial group in our sample. With this in mind, the estimates reported in columns 1–3 suggest that among individuals who are Black, their degree of zero-sum thinking is not associated with the location of residence of the ancestors. This finding echoes that of Tables 8 and 9, where it was shown that although Black people have much higher rates of zero-sum thinking than all other racial groups, for them a history of enslavement was not strongly predictive of zero-sum thinking. A plausible interpretation is that Black Americans faced such a wide range of forms of coercion and discrimination beyond enslavement that enslavement per se has little effect. In short, forces that generated zero-sum thinking among Black populations have been ubiquitous in U.S. history. The findings here can also be rationalized by the same explanation.

The estimates of columns 7–9 show that white individuals who have ancestors who were raised in counties with high levels of enslavement of Black people are more zero-sum today. White people were not enslaved in the same manner in the U.S. South as Black people. However,

Table 12: Zero-Sum Thinking and Growing Up in Counties With Enslavement: Estimated Effects by Race of Respondent

	Dependent variable: Zero-sum index (0 to 1)								
	Black			Latino, Indigen., Asian, other			White		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county enslaved share	-0.0122			-0.0273			0.0621***		
	(0.0269)			(0.0464)			(0.0212)		
Father's county enslaved share		-0.0217			-0.0048			0.0531**	
		(0.0259)			(0.0567)			(0.0230)	
Grandfather's county enslaved share			0.0112			0.0693			0.0512*
			(0.0317)			(0.0759)			(0.0271)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	1,501	1,137	689	2,231	1,106	538	9,386	8,110	5,191
R^2	0.043	0.064	0.110	0.047	0.064	0.104	0.064	0.072	0.090
Num. clusters	460	481	360	554	409	291	1,672	1,762	1,548
Dependent variable mean	0.561	0.566	0.570	0.495	0.508	0.524	0.490	0.492	0.503

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. "Share enslaved" 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 that 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.

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Table 13: Zero-Sum Thinking and Growing Up in Counties With Enslavement: Estimated Effects by for White Respondents by Whether State Had Legal Enslavement

	Dependent variable: Zero-sum index (0 to 1)					
	States without enslavement			States with enslavement		
	(1)	(2)	(3)	(4)	(5)	(6)
Respondent's county enslaved share	0.0143			0.0684***		
	(0.0542)			(0.0224)		
Father's county enslaved share		-0.0036			0.0585**	
		(0.0488)			(0.0253)	
Grandfather's county enslaved share			-0.1208*			0.0784***
			(0.0659)			(0.0284)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Observations	5,968	5,112	3,163	3,418	2,998	2,028
R^2	0.063	0.069	0.091	0.070	0.083	0.102
Num. clusters	1,092	1,148	981	1,050	1,102	917
Dependent variable mean	0.488	0.489	0.504	0.493	0.497	0.503

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. The sample is restricted to white respondents only. "States with enslavement" restricts the sample to respondents who currently live in a state that formerly had legal enslavement: Delaware, Georgia, Maryland, South Carolina, Virginia, North Carolina, Kentucky, Tennessee, Louisiana, Mississippi, Alabama, Missouri, Arkansas, Florida, and Texas."Share enslaved" 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 that 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.

they were sometimes owners of enslaved people. Thus, they participated in the zero-sum activity of slavery but on the other side of the relationship; therefore, it is expected that we would find effects for White respondents.

We dig further into the effects on white descendants in Table 13 where we divide the sample to individuals who are currently living (and not) in states where in the antebellum period enslavement of Black people was legal and commonly practiced: Delaware, Georgia, Maryland, South Carolina, Virginia, North Carolina, Kentucky, Tennessee, Louisiana, Mississippi, Alabama, Missouri, Arkansas, Florida, and Texas. The estimates show clearly that the effects we estimate are only found for individuals who are currently living in states that historically allowed the

enslavement of others. Thus, America's history of slavery appears to have generated more zero-sum thinking not only among the descendants of the Black populations who were enslaved but also among the descendants of the white populations who tended to the owners of other enslaved individuals. In other words, part of the roots of zero-sum thinking in the United States can be traced back to its history of the legal enslavement of human beings.

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 the 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 a rich set of information about characteristics about their ancestors.

The first part of the paper documented that there is an extremely strong 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 incomes and affirmative action for women and African-Americans. Zero sum thinking is also associated with more liberal economic policies and political alignment with Democratic rather than the Republican Party.

We also find that zero-sum thinking is linked empirically to important political crises experienced in the United States. Specifically, we find that individuals that 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 the January 6, 2021 attack on the U.S. Capitol Building, an act that is more justifiable, and seen as being 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. They are also found (and tend to be much stronger) if one looks at individuals within the same political party.

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

Having examined the relationship between zero-sum thinking and one's view about politics, policy, and social issues, we then turn to the question of the roots of zero-sum thinking. We examine three factors which are key when thinking about the United States: immigration, economic mobility, 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. Individuals who are Black 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.

References

Abramitzky, Ran, Leah Platt Boustan, and Katherine Eriksson, "A Nation of Immigrants: Assimilation and Economic Outcomes in the Age of Mass Migration," *Journal of Political Economy*, 2014, *122* (3), 467–506.

Davidai, Shai and Martino Ongis, "The Politics of Zero-Sum Thinking: The Relationship between Political Ideology and the Belief that Life is a Zero-Sum Game," *Science Advances*, 2019, *5*, eeay3761.

Flood, Sarah, Miriam King, Renae Rodgers, Steven Ruggles, and J. Robert Warren, "ntegrated Public Use Microdata Series, Current Population Survey: Version 10.0 [dataset]," 2022.

Foster, George M, *Traditional Cultures, and the Impact of Technological Change*, New York: Harper, 1962.

_ , "Peasant Society and the Image of Limited Good," *American Anthropologist*, 1965, *67* (2), 293–315.

_ , *Tzintzuntzan; Mexican Peasants in a Changing World*, New York: Little Brown & Company, 1967.

_ , "A Second Look at Limited Good," *Anthropological Quarterly*, 1972, *45* (2), 57–64.

Gallup, "Party Affiliation," https://news.gallup.com/poll/15370/party-affiliation.aspx 2022.

Leip, Dave, "Atlas of U.S. Presidential Elections," https://uselectionatlas.org/RESULTS/ 2022.

Long, Jason and Joseph Ferrie, "Occupational Mobility in Great Britain and the United States since 1850," *American Economic Review*, 2013, *103* (4), 1109–1137.

Nunn, Nathan, "History as Evolution," in "Handbook of Historical Economics," New York: North Holland, 2021, pp. 41–91.

Rozycka-Tran, Joanna, Pawel Boski, and Bogdan Wojciszke, "Belief in a Zero-Sum Game as a Social Axiom: A 37-Nation Study," *Journal of Cross-Cultural Psychology*, 2015, *46* (4), 525–548.

Sequeira, Sandra, Nathan Nunn, and Nancy Qian, "Immigrants and the Making of America," *Review of Economic Studies*, 2020, *87* (1), 382–419.

Thurow, Lester C., *The Zero-Sum Society: Distribution and The Possibilities for Economic Change*, New York: Basic Books, 1980.

Online Appendix (Not for Publication)

Finer Details of the Survey

Ancestry Survey Questions

For each of the respondent's 6 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	3,962	0.75	0.06	0.03	0.17
2	5,214	0.57	0.06	0.22	0.15
3	4,198	0.71	0.08	0.03	0.19
4	5,707	0.50	0.13	0.19	0.18
5	6,127	0.49	0.13	0.15	0.22
Overall	25,208	0.58	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.

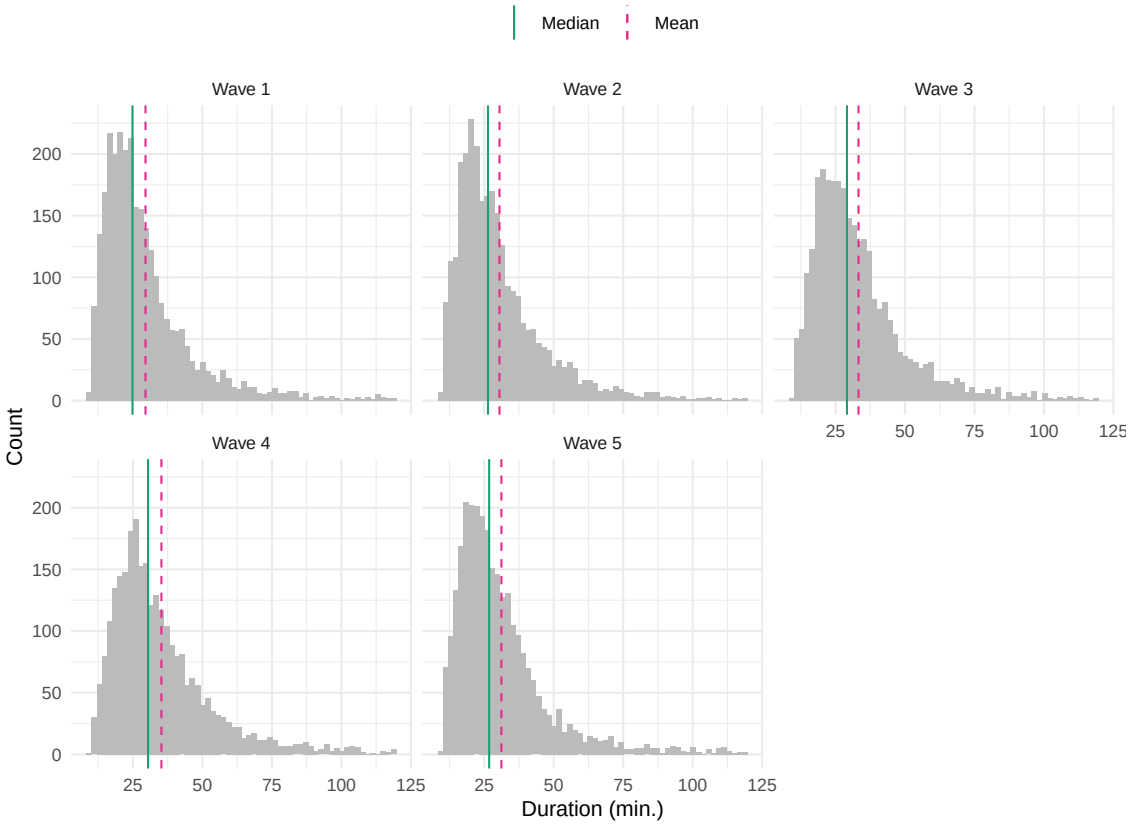


Figure A1: Survey Duration by Wave

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

Table A2: Predictors of Attrition

	Dependent variable: Completed survey (1)
(Intercept)	0.7244*** (0.0483)
Male	0.0164*** (0.0053)
Other gender	0.0473 (0.0383)
American Indian/Alaska Native	0.0140 (0.0359)
Asian/Asian American	0.0819*** (0.0126)
White	0.0487*** (0.0097)
Hispanic/Latino	0.0465*** (0.0124)
Native Hawaiian/Pacific Islander	-0.0479 (0.0607)
Other race	0.0080 (0.0204)
Missing race	-0.0072 (0.0103)
Age 30-39	-0.0293*** (0.0084)
Age 40-49	-0.0343*** (0.0088)
Age 50-59	-0.0413*** (0.0086)
Age 60+	-0.0242*** (0.0084)
Moderate Republican	0.0261*** (0.0100)
Independent	0.0039 (0.0093)
Moderate Democrat	0.0061 (0.0100)
Strong Democrat	0.0293*** (0.0096)
Other party	-0.0488** (0.0191)
Reached party question but did not answer	-0.2316 (0.1949)
Did not reach party question	-0.7852*** (0.0143)
$15,000–$24,999	0.0271** (0.0134)
$25,000–$39,999	0.0401*** (0.0122)
$40,000–$54,999	0.0643*** (0.0123)
$55,000–$74,999	0.0529*** (0.0121)
$75,000–$99,999	0.0599*** (0.0123)
$100,000–$149,999	0.0754*** (0.0116)
$150,000+	0.0881*** (0.0126)
Missing income	-0.1607 (0.1662)
Some high school	-0.0242 (0.0508)
High school degree/GED	0.0152 (0.0470)
Some college	0.0325 (0.0470)
2-year college degree	0.0518 (0.0473)
4-year college degree	0.0722 (0.0468)
Master's degree, M.B.A.	0.0853* (0.0471)
Ph.D., J.D., M.D.	0.0926* (0.0480)
Reached education question but did not answer	0.0335 (0.0484)
Did not reach education question	0.0442 (0.0482)
Wave 2	-0.0141* (0.0077)
Wave 3	-0.0195** (0.0081)
Wave 4	-0.0350*** (0.0086)
Wave 5	-0.0772*** (0.0084)
Observations	18,801
R^2	0.264
Dependent variable mean	0.784

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

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. Standard errors are in parentheses.

Appendix Tables and Figures

Table A3: Zero-Sum Thinking and County Unemployment

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county unemp.	0.2126**	0.2286**	0.1802**						
	(0.0845)	(0.0904)	(0.0906)						
Father's county unemp.				0.0447	0.0528	0.0404			
				(0.0890)	(0.0921)	(0.0922)			
Grandfather's county unemp.							0.1482	0.1865	0.2181
							(0.1859)	(0.1992)	(0.1975)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	12,997	12,997	12,997	6,877	6,877	6,877	922	922	922
R^2	0.040	0.046	0.058	0.038	0.051	0.061	0.031	0.089	0.103
Num. clusters	9,324	9,324	9,324	5,270	5,270	5,270	826	826	826
Dependent variable mean	0.499	0.499	0.499	0.523	0.523	0.523	0.543	0.543	0.543

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. County unemployment rates are averages for the county where the respondent lived from ages 10 to 19 (over those years), and for the counties where their father or paternal grandfather lived from ages 7 to 17 (over those years). Regressions using ancestors' counties include fixed effects for whether the ancestor's year of birth was reported directly by the respondent or predicted. County unemployment rates are from the decennial Census for 1940, 1950, and 1970 (and are linearly interpolated between these years and between 1970 and 1976) and from the Bureau of Labor Statistics annually from 1976 to 2021. All regressions include fixed effects for the source of the unemployment data. 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 interaction of the relevant county and the respondent or their ancestor's year of birth, and are reported in parentheses.

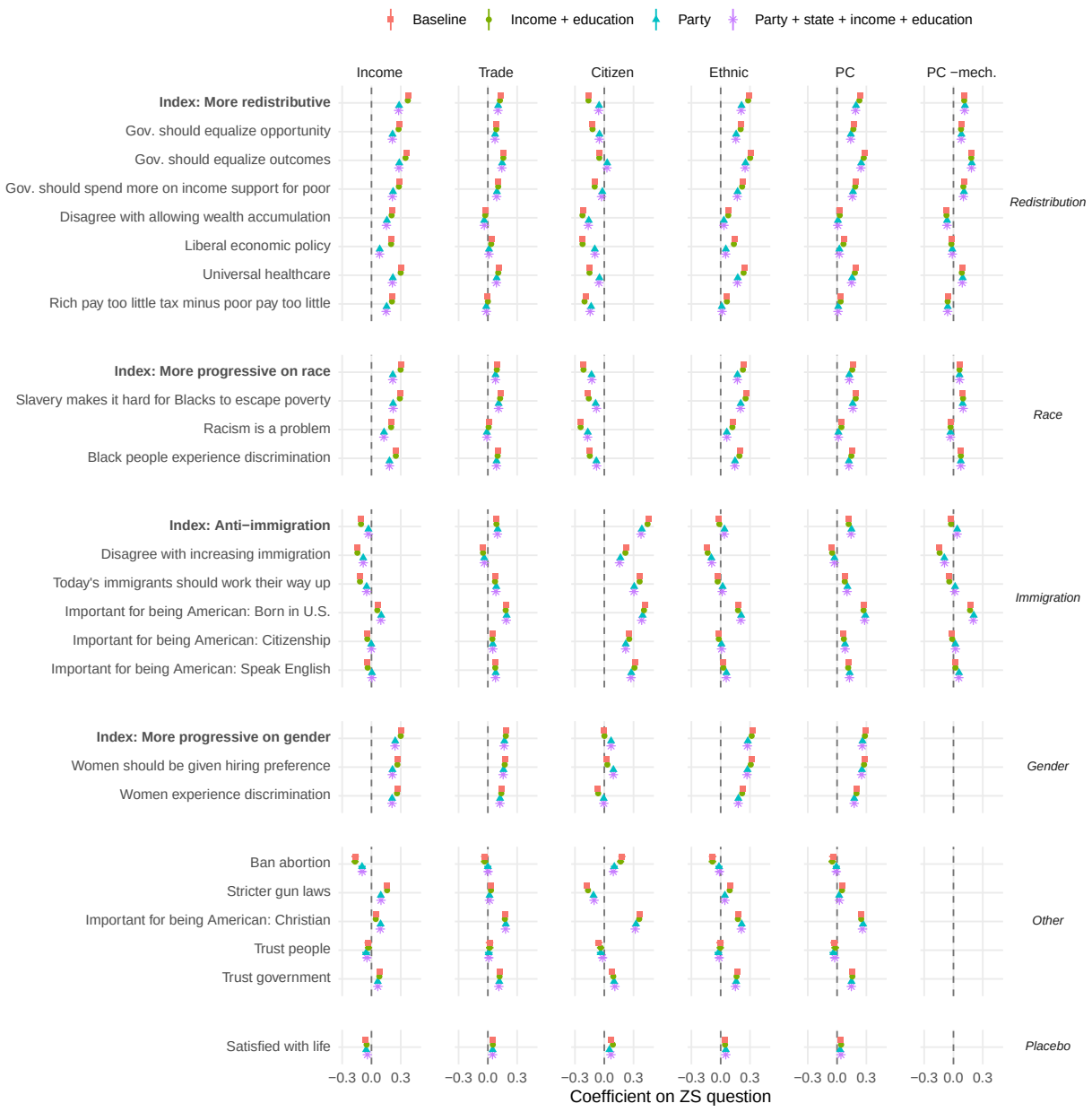


Figure A2: Zero-sum thinking and policy views, by domain

Notes: Each coefficient is from a separate regression with controls for age, gender, and their interaction, as well as wave fixed effects. Outcomes and regressors are standardized to have mean zero and standard deviation one.

Table A4: Zero-Sum Thinking and County Unemployment (Parents and Grandparents)

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county unemp.	0.2126**	0.2286**	0.1802**						
	(0.0845)	(0.0904)	(0.0906)						
Parents' counties unemp.				0.0031	0.0194	0.0159			
				(0.0858)	(0.0890)	(0.0886)			
Grandparents' counties unemp.							0.1109	0.1107	0.1158
							(0.1061)	(0.1115)	(0.1095)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	12,997	12,997	12,997	8,544	8,544	8,544	2,312	2,312	2,312
R^2	0.040	0.046	0.058	0.036	0.046	0.057	0.032	0.066	0.083
Num. clusters	9,324	9,324	9,324	8,252	8,252	8,252	2,311	2,311	2,311
Dependent variable mean	0.499	0.499	0.499	0.519	0.519	0.519	0.529	0.529	0.529

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. County unemployment rates are averages for the county where the respondent lived from ages 10 to 19 (over those years), and for the counties where their parents or grandparents lived from ages 7 to 17 (over those years). Regressions using ancestors' counties include fixed effects for whether the ancestor's year of birth was reported directly by the respondent or predicted. County unemployment rates are from the decennial Census for 1940, 1950, and 1970 (and are linearly interpolated between these years and between 1970 and 1976) and from the Bureau of Labor Statistics annually from 1976 to 2021. All regressions include fixed effects for the source of the unemployment data. 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 interaction of the relevant county or counties and the respondent or their ancestors' years of birth, and are reported in parentheses.

Table A5: Zero-Sum Thinking and Change in County Unemployment

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county unemp. change	-0.8636	-1.082*	-1.052*						
	(0.6208)	(0.6226)	(0.6160)						
Father's county unemp. change				0.2181	0.3368	0.2807			
				(0.8193)	(0.8280)	(0.8227)			
Grandfather's county unemp. change							3.221*	3.609*	2.863
							(1.941)	(1.944)	(1.933)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	12,985	12,985	12,985	6,703	6,703	6,703	845	845	845
R^2	0.039	0.046	0.058	0.038	0.052	0.061	0.033	0.093	0.105
Num. clusters	9,319	9,319	9,319	5,131	5,131	5,131	763	763	763
Dependent variable mean	0.499	0.499	0.499	0.524	0.524	0.524	0.545	0.545	0.545

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. The changes in county unemployment rates are averages for the county where the respondent lived from ages 10 to 19 (over those years), and for the counties where their father or paternal grandfather lived from ages 7 to 17 (over those years). Regressions using ancestors' counties include fixed effects for whether the ancestor's year of birth was reported directly by the respondent or predicted. County unemployment rates are from the decennial Census for 1940, 1950, and 1970 (and are linearly interpolated between these years and between 1970 and 1976) and from the Bureau of Labor Statistics annually from 1976 to 2021. All regressions include fixed effects for the source of the unemployment data. 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 interaction of the relevant county and the respondent or their ancestor's year of birth, and are reported in parentheses.

Table A6: Zero-Sum Thinking and Change in County Unemployment (Binarized)

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county unemp. change above thresh.	-0.0062	-0.0069	-0.0066						
	(0.0044)	(0.0044)	(0.0044)						
Father's county unemp. change above thresh.				0.0063	0.0090	0.0086			
				(0.0091)	(0.0092)	(0.0092)			
Grandfather's county unemp. change above thresh.							0.0551	0.0798	0.0793
							(0.0509)	(0.0539)	(0.0513)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	12,985	12,985	12,985	6,703	6,703	6,703	845	845	845
R^2	0.039	0.046	0.058	0.038	0.052	0.061	0.031	0.091	0.104
Num. clusters	9,319	9,319	9,319	5,131	5,131	5,131	763	763	763
Dependent variable mean	0.499	0.499	0.499	0.524	0.524	0.524	0.545	0.545	0.545

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. The independent variable of interest is whether the maximum annual change in the county unemployment rate was above the 95th percentile of this distribution, for the county where the respondent lived from ages 10 to 19 (over those years), and for the counties where their father or paternal grandfather lived from ages 7 to 17 (over those years). Regressions using ancestors' counties include fixed effects for whether the ancestor's year of birth was reported directly by the respondent or predicted. County unemployment rates are from the decennial Census for 1940, 1950, and 1970 (and are linearly interpolated between these years and between 1970 and 1976) and from the Bureau of Labor Statistics annually from 1976 to 2021. All regressions include fixed effects for the source of the unemployment data. 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 interaction of the relevant county and the respondent or their ancestor's year of birth, and are reported in parentheses.

Table A7: Zero-Sum Thinking and County Unemployment: Effects By Experienced Mobility

	Dependent variable: Zero-sum index (0 to 1)								
	Downward mobility			No mobility			Upward mobility		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county unemp.	0.3488*			0.1986			0.1291		
	(0.1908)			(0.1493)			(0.1443)		
Father's county unemp.		0.0512			0.0233			0.0446	
		(0.2499)			(0.1377)			(0.1622)	
Grandfather's county unemp.			-0.2910			0.3323			0.1333
			(0.8250)			(0.3621)			(0.5016)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	2,848	1,096	119	4,863	2,715	428	4,834	2,385	229
R^2	0.056	0.106	0.472	0.079	0.098	0.190	0.071	0.056	0.287
Num. clusters	2,545	1,036	119	4,052	2,307	400	4,049	2,124	219
Dependent variable mean	0.506	0.528	0.572	0.514	0.553	0.562	0.478	0.492	0.524

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. County unemployment rates are averages for the county where the respondent lived from ages 10 to 19 (over those years), and for the counties where their father or paternal grandfather lived from ages 7 to 17 (over those years). Regressions using ancestors' counties include fixed effects for whether the ancestor's year of birth was reported directly by the respondent or predicted. County unemployment rates are from the decennial Census for 1940, 1950, and 1970 (and are linearly interpolated between these years and between 1970 and 1976) and from the Bureau of Labor Statistics annually from 1976 to 2021. All regressions include fixed effects for the source of the unemployment data. 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 interaction of the relevant county and the respondent or their ancestor's year of birth, and are reported in parentheses. Experienced mobility measures are own mobility (growing up to present) for the respondent's county, father to respondent mobility for the father's county, and paternal grandfather to father mobility for the grandfather's county.

Table A8: Zero-Sum Thinking and State Foreign Share

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's state foreign share	-0.0181	-0.0045	0.0212						
	(0.0365)	(0.0503)	(0.0507)						
Father's state foreign share				-0.1665***	-0.2283***	-0.1780***			
				(0.0375)	(0.0435)	(0.0440)			
Grandfather's state foreign share							-0.0846	-0.1960**	-0.1419*
							(0.0624)	(0.0761)	(0.0771)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	13,488	13,488	13,488	10,647	10,647	10,647	3,633	3,633	3,633
R^2	0.045	0.051	0.062	0.056	0.065	0.075	0.063	0.089	0.099
Num. clusters	2,490	2,490	2,490	2,483	2,483	2,483	1,298	1,298	1,298
Dependent variable mean	0.505	0.505	0.505	0.509	0.509	0.509	0.555	0.555	0.555

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. "Foreign share" refers to the proportion of individuals in a state who were born outside of the U.S., and are averages for the state where the respondent lived from ages 10 to 19 (over those years), and for the states where their father or paternal grandfather lived from ages 7 to 17 (over those years). Regressions using ancestors' states include fixed effects for whether the ancestor's year of birth was reported directly by the respondent or predicted. Foreign shares are from the decennial Census from 1920 to 2000 (and are linearly interpolated between years), and from XX annually from 2001 to 2020. 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 interaction of the relevant state (or District of Columbia) and the respondent or their ancestor's year of birth and are reported in parentheses.

Table A9: Zero-Sum Thinking and State Foreign Share (Parents and Grandparents)

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's state foreign share	-0.0181	-0.0045	0.0212						
	(0.0365)	(0.0503)	(0.0507)						
Parents' states foreign share				-0.1840***	-0.2616***	-0.1998***			
				(0.0363)	(0.0425)	(0.0427)			
Grandparents' states foreign share							-0.1888***	-0.2731***	-0.1936***
							(0.0423)	(0.0525)	(0.0537)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	13,488	13,488	13,488	11,863	11,863	11,863	5,907	5,907	5,907
R^2	0.045	0.051	0.062	0.052	0.061	0.071	0.048	0.065	0.074
Num. clusters	2,490	2,490	2,490	9,360	9,360	9,360	5,876	5,876	5,876
Dependent variable mean	0.505	0.505	0.505	0.508	0.508	0.508	0.534	0.534	0.534

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. "Foreign share" refers to the proportion of individuals in a state who were born outside of the U.S., and are averages for the state where the respondent lived from ages 10 to 19 (over those years), and for the states where their parents or grandparents lived from ages 7 to 17 (over those years). Regressions using ancestors' states include fixed effects for whether the ancestor's year of birth was reported directly by the respondent or predicted. Foreign shares are from the decennial Census from 1920 to 2000 (and are linearly interpolated between years), and from XX annually from 2001 to 2020. 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 interaction of the relevant state or states (or District of Columbia) and the respondent or their ancestors' years of birth and are reported in parentheses.

Table A10: Zero-Sum Thinking and State Foreign Share: Mobility Controls

	Dependent variable: Zero-sum index (0 to 1)																	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Respondent's state foreign share	0.0212	0.0090	0.0289	0.0309	0.0278	0.0270												
	(0.0507)	(0.0515)	(0.0558)	(0.0660)	(0.0662)	(0.0663)												
Father's state foreign share							-0.1780***	-0.1853***	-0.2130***	-0.2069***	-0.2164***	-0.2248***						
							(0.0440)	(0.0450)	(0.0471)	(0.0582)	(0.0571)	(0.0576)						
Grandfather's state foreign share													-0.1419*	-0.1400*	-0.1328*	-0.0866	-0.0970	-0.0962
													(0.0771)	(0.0772)	(0.0793)	(0.0862)	(0.0853)	(0.0860)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Respondent own mobility		✓				✓		✓				✓		✓				✓
Respondent-father mobility			✓			✓			✓			✓			✓			✓
Father-grandfather mobility				✓		✓				✓		✓				✓		✓
Respondent-grandfather mobility					✓	✓					✓	✓					✓	✓
Observations	13,488	13,003	11,374	8,571	8,649	8,515	10,647	10,385	9,465	7,201	7,243	7,168	3,633	3,570	3,453	3,051	3,058	3,032
R^2	0.062	0.073	0.082	0.090	0.113	0.121	0.075	0.084	0.092	0.101	0.127	0.136	0.099	0.112	0.122	0.115	0.151	0.162
Num. clusters	2,490	2,459	2,365	2,155	2,160	2,148	2,483	2,449	2,366	2,151	2,155	2,144	1,298	1,282	1,262	1,196	1,195	1,191
Dependent variable mean	0.505	0.504	0.507	0.521	0.520	0.520	0.509	0.508	0.511	0.525	0.524	0.525	0.555	0.555	0.556	0.568	0.568	0.568

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. "Foreign share" refers to the proportion of individuals in a state who were born outside of the U.S., and are averages for the state where the respondent lived from ages 10 to 19 (over those years), and for the states where their father or paternal grandfather lived from ages 7 to 17 (over those years). Regressions using ancestors' states include fixed effects for whether the ancestor's year of birth was reported directly by the respondent or predicted. Foreign shares are from the decennial Census from 1920 to 2000 (and are linearly interpolated between years), and from XX annually from 2001 to 2020. 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 interaction of the relevant state (or District of Columbia) and the respondent or their ancestor's year of birth and are reported in parentheses.

Table A11: Zero-Sum Thinking and State Foreign Share: Other Controls

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's state foreign share	0.0212	0.0733	0.0427						
	(0.0507)	(0.0510)	(0.0594)						
Father's state foreign share				-0.1780***	-0.0362	-0.1755***			
				(0.0440)	(0.0523)	(0.0479)			
Grandfather's state foreign share							-0.1419*	-0.0159	-0.1196
							(0.0771)	(0.0986)	(0.0813)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State with legal enslavement		✓			✓			✓	
Immigrant generation			✓			✓			✓
Observations	13,488	13,488	10,477	10,647	10,647	8,487	3,633	3,633	3,225
R^2	0.062	0.064	0.071	0.075	0.077	0.083	0.099	0.100	0.115
Num. clusters	2,490	2,490	2,322	2,483	2,483	2,299	1,298	1,298	1,235
Dependent variable mean	0.505	0.505	0.497	0.509	0.509	0.502	0.555	0.555	0.552

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. "Foreign share" refers to the proportion of individuals in a state who were born outside of the U.S., and are averages for the state where the respondent lived from ages 10 to 19 (over those years), and for the states where their father or paternal grandfather lived from ages 7 to 17 (over those years). Regressions using ancestors' states include fixed effects for whether the ancestor's year of birth was reported directly by the respondent or predicted. Foreign shares are from the decennial Census from 1920 to 2000 (and are linearly interpolated between years), and from XX annually from 2001 to 2020. 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 interaction of the relevant state (or District of Columbia) and the respondent or their ancestor's year of birth and are reported in parentheses. States that formerly had legal enslavement are Delaware, Georgia, Maryland, South Carolina, Virginia, North Carolina, Kentucky, Tennessee, Louisiana, Mississippi, Alabama, Missouri, Arkansas, Florida, and Texas.

Table A12: Zero-Sum Thinking and State Foreign Share: Effects By Immigrant Status

	Dependent variable: Zero-sum index (0 to 1)					
	Not immigrant			Immigrant		
	(1)	(2)	(3)	(4)	(5)	(6)
Respondent's state foreign share	0.0977			-0.0816		
	(0.0775)			(0.0879)		
Father's state foreign share		-0.1069*			-0.2749***	
		(0.0617)			(0.0804)	
Grandfather's state foreign share			-0.1104			-0.2028
			(0.0866)			(0.2163)
Demographic controls	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓
Observations	6,450	6,102	2,810	4,027	2,385	415
R^2	0.077	0.083	0.112	0.081	0.120	0.275
Num. clusters	2,024	2,072	1,139	1,385	1,091	326
Dependent variable mean	0.506	0.508	0.548	0.484	0.488	0.579

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The table reports OLS estimates where the unit of observation is an individual. "Immigrant" refers to first, second, and third generation immigrants. "Foreign share" refers to the proportion of individuals in a state who were born outside of the U.S., and are averages for the state where the respondent lived from ages 10 to 19 (over those years), and for the states where their father or paternal grandfather lived from ages 7 to 17 (over those years). Regressions using ancestors' states include fixed effects for whether the ancestor's year of birth was reported directly by the respondent or predicted. Foreign shares are from the decennial Census from 1920 to 2000 (and are linearly interpolated between years), and from XX annually from 2001 to 2020. 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 interaction of the relevant state (or District of Columbia) and the respondent or their ancestor's year of birth and are reported in parentheses.

Table A13: 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	0.0024	0.0071	0.0104						
	(0.0222)	(0.0222)	(0.0225)						
Father's county foreign share				-0.0312*	-0.0278	-0.0251			
				(0.0177)	(0.0178)	(0.0194)			
Grandfather's county foreign share							-0.0403*	-0.0403*	-0.0445**
							(0.0220)	(0.0221)	(0.0221)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Race fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
2nd generation immigrant		✓	✓		✓	✓		✓	✓
3rd generation immigrant			✓			✓			✓
Observations	12,566	12,564	12,552	9,962	9,962	9,955	6,176	6,176	6,174
R^2	0.058	0.059	0.060	0.067	0.068	0.068	0.083	0.083	0.083
Num. clusters	1,735	1,735	1,735	1,873	1,873	1,872	1,662	1,662	1,661
Dependent variable mean	0.499	0.499	0.499	0.501	0.501	0.501	0.511	0.511	0.512

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

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 that 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 A14: 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	-0.0251	0.0037	0.0024						
	(0.0245)	(0.0223)	(0.0222)						
Father's county foreign share				-0.0544**	-0.0467**	-0.0312*			
				(0.0218)	(0.0186)	(0.0177)			
Grandfather's county foreign share							-0.0483**	-0.0620***	-0.0403*
							(0.0227)	(0.0214)	(0.0220)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	12,566	12,566	12,566	9,962	9,962	9,962	6,176	6,176	6,176
R^2	0.039	0.046	0.058	0.046	0.056	0.067	0.057	0.072	0.083
Num. clusters	1,735	1,735	1,735	1,873	1,873	1,873	1,662	1,662	1,662
Dependent variable mean	0.499	0.499	0.499	0.501	0.501	0.501	0.511	0.511	0.511

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

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 that 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 1920

	Dependent variable: Zero-sum index (0 to 1)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Respondent's county foreign share	-0.0189	0.0039	0.0033						
	(0.0318)	(0.0277)	(0.0274)						
Father's county foreign share				-0.0624**	-0.0637***	-0.0468**			
				(0.0276)	(0.0217)	(0.0200)			
Grandfather's county foreign share							-0.0482*	-0.0768***	-0.0536**
							(0.0272)	(0.0237)	(0.0240)
Demographic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wave fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects		✓	✓		✓	✓		✓	✓
Race fixed effects			✓			✓			✓
Observations	12,819	12,819	12,819	10,139	10,139	10,139	6,267	6,267	6,267
R^2	0.039	0.046	0.058	0.048	0.057	0.068	0.057	0.072	0.083
Num. clusters	1,778	1,778	1,778	1,918	1,918	1,918	1,700	1,700	1,700
Dependent variable mean	0.499	0.499	0.499	0.501	0.501	0.501	0.511	0.511	0.511

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

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 that 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.

Survey questionnaire

1. Survey Links

[placeholder for survey links]

2. Consent

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

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

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

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

   No, I would not like to participate

3. *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

4. *Own demographics: location questions*

8. Were you born in the United States?

   Yes; No

9. (If “No" to Q8) In what country were you born? Note: to use this dropdown menu, simply type the first letters and the country will appear automatically.
   [dropdown menu]

10. (If “Yes" to Q8) In which US state were you born? Note: to use this dropdown menu, simply type the first letters and the state will appear automatically.

    N.B. For all questions where a respondent is asked where they or a family member “primarily" lived, the question is followed by the statement: *“If you lived in multiple locations, please choose the location where you lived for the longest period of time.*"

11. Between the age of 0 and 9, did you primarily live in the United States?
    Yes; No

12. (If “No" to Q11) In what country did you primarily live between the age of 0 and 9?
    [dropdown menu]

13. (If “Yes" to Q11) In which state did you primarily live between the age of 0 and 9?
    [dropdown menu]

14. (If “Yes" to Q11) In which town did you primarily live between the age of 0 and 9?
    [text box]

15. Between the age of 10 and 19, did you primarily live in the United States?
    Yes; No

16. (If “No" to Q15) In what country did you primarily live between the age of 10 and 19?
    [dropdown menu]

17. (If “Yes" to Q15) In which state did you primarily live between the age of 10 and 19?
    [dropdown menu]

18. (If “Yes" to Q15) In which town did you primarily live between the age of 10 and 19?
    [text box]

19. (If $\leq$ 1999 to Q3) Did you primarily live in the United States in your 20s?
    Yes; No

20. (If “No" to Q19) In what country did you primarily live in your 20s?
[dropdown menu]

21. (If “Yes" to Q19) In which state did you primarily live in your 20s?
[dropdown menu]

22. (If “Yes" to Q19) In which town did you primarily live in your 20s?
[text box]

23. [W1-W4] (If $\leq$ 1989 to Q3) Did you primarily live in the United States in your 30s?
Yes; No

24. [W1-W4] (If “No" to Q23) In what country did you primarily live in your 30s?
[dropdown menu]

25. [W1-W4] (If “Yes" to Q23) In which state did you primarily live in your 30s?
[dropdown menu]

26. [W1-W4] (If “Yes" to Q23) In which town did you primarily live in your 30s?
[text box]

27. [W1-W4] (If $\leq$ 1979 to Q3) Did you primarily live in the United States in your 40s and after?
Yes; No

28. [W1-W4] (If “No" to Q27) In what country did you primarily live in your 40s and after?
[dropdown menu]

29. [W1-W4] (If “Yes" to Q27) In which state did you primarily live in your 40s and after?
[dropdown menu]

30. [W1-W4] (If “Yes" to Q27) In which town did you primarily live in your 40s and after?
[text box]

5. 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

6. 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

7. Parents' Demographics

N.B. All of these questions were repeated for the respondent's mother as well.

*Now we'd like you to think of your **father**. We are going to ask you questions about him. 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 currently alive?

Yes; No; Don't know

50. [W4, W5] (If "Yes" to Q49) What is the age of your father?

[text box]

51. [W4, W5] (If "Yes" to Q49 and no response to Q50 What is the year of birth of your father?

[text box]

52. [W4, W5] (If "No" to Q49) In what year did he die?

[text box]

53. [W4, W5] (If "No" to Q49) How old was he when he 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?

[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 born in the United States?

[Yes; No; Don't know]

56. [W1-W4] (If “No" to Q55) In what country was your father born?
[dropdown]

57. [W1-W4] (If “Yes" to Q55) In which state was your father born?
[dropdown]

58. [W1-W4] (If “Yes" to Q55) In which town was your father born?
[text box]

59. Did your **father** 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** primarily grow up?
[dropdown menu]

61. (If “Yes" to Q59) In which state did your **father** primarily grow up?
[dropdown menu]

62. (If “Yes" to Q59) In which town did your father primarily grow up?
[text box]

63. Which category best describes your **father’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** as an adult?
[text box]

65. [W5] Which category best describes your **father’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.*

8. Grandparents' demographics

*Now we'd like you to think of your **paternal grandfather** (father of your father). We are going to ask you questions about him. 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.*

N.B. All of these questions were repeated for the paternal grandmother, maternal grandfather, and maternal grandmother as well.

67. [W4, W5] Is your paternal grandfather (father of your father) currently alive?
Yes; No; Don't know

68. [W4, W5] (If "Yes" to Q67) What is the age of your paternal grandfather (father of your father)?
[text box]

69. [W4, W5] (If "Yes" to Q67 and no response to Q68) What is the year of birth of your paternal grandfather (father of your father)?
[text box]

70. [W4, W5] (If "No" to Q67) In what year did he die?
[text box]

71. [W4, W5] (If "No" to Q67) How old was he when he died?
[text box]

72. [W4, W5] (If "No" to Q67 and no response to Q70 or Q71) What is the year of birth of your paternal grandfather (father of your father)?
[text box]

73. Did your **paternal grandfather** (father of your father) 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 grandfather** (father of your father) primarily grow up?
[dropdown menu]

75. (If "Yes" to Q73) In which state did your **paternal grandfather** (father of your father) primarily grow up?
[dropdown menu]

76. (If "Yes" to Q73) In which town did your **paternal grandfather** (father of your father) primarily grow up?
[text box]

77. Which category best describes the highest level of education of your **paternal grandfather** (father of your father)?

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 grandfather** (father of your father) as an adult? *[text box]*

79. [W5] Which category best describes your **paternal grandfather'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*

N.B. Question Q80 was asked after the respondent answered the questions about paternal grandfather/grandmother and then maternal grandfather/grandmother

80. How many children did your paternal grandparents (your father's parents) have? *1; 2; 3; 4; 5; 6; 7; 8; 9; 10 or more; Don't know*

9. 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

10. Veteran Status Information

N.B. These questions repeat for every family member except for son/daughter (i.e., spouse, father, mother, paternal grandfather, paternal grandmother, maternal grandfather, maternal grandmother) for whom the respondent indicated that they served in the military.

87. (If "None" or "Don't know" is not selected to Q81) What is/was your 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 you serve/have you 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 were you/have you been in the Reserve or National Guard?
[text box]

90. (If > 0 to Q88) In which year did your active duty status begin?
[text box]

91. Did you 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) Were you drafted or did you volunteer?
Drafted, Volunteered, Don't know [for other family members only])

11. 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

12. Relative Income

N.B. Question Q96 repeats for each parent and each grandparent.

96. **When you were growing up** (age 7-17), compared with other families in your country back then, would you say your 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

13. 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

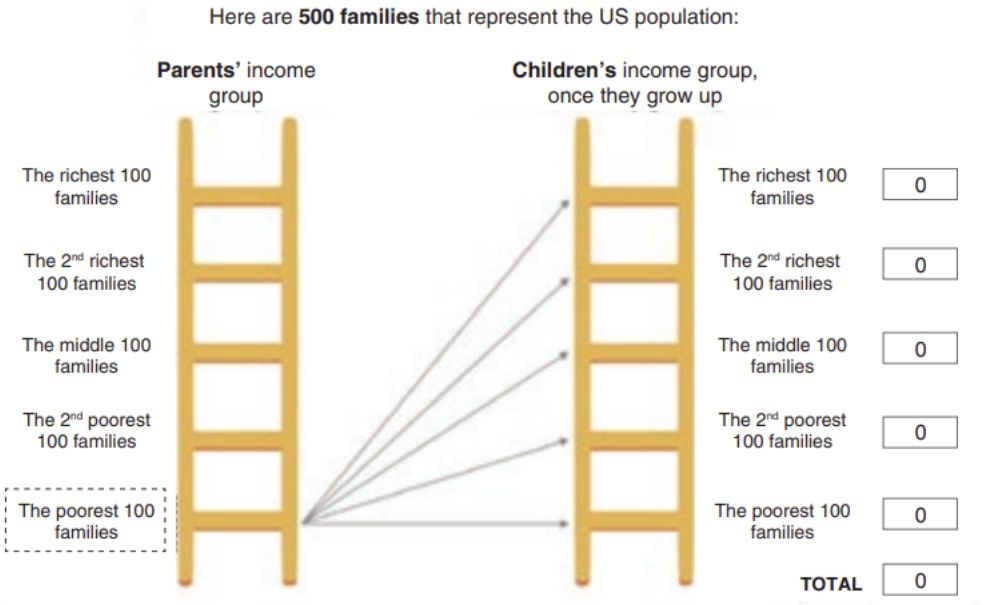
102. **We would now like to ask you what you think about the life opportunities of children from very poor families.**

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:

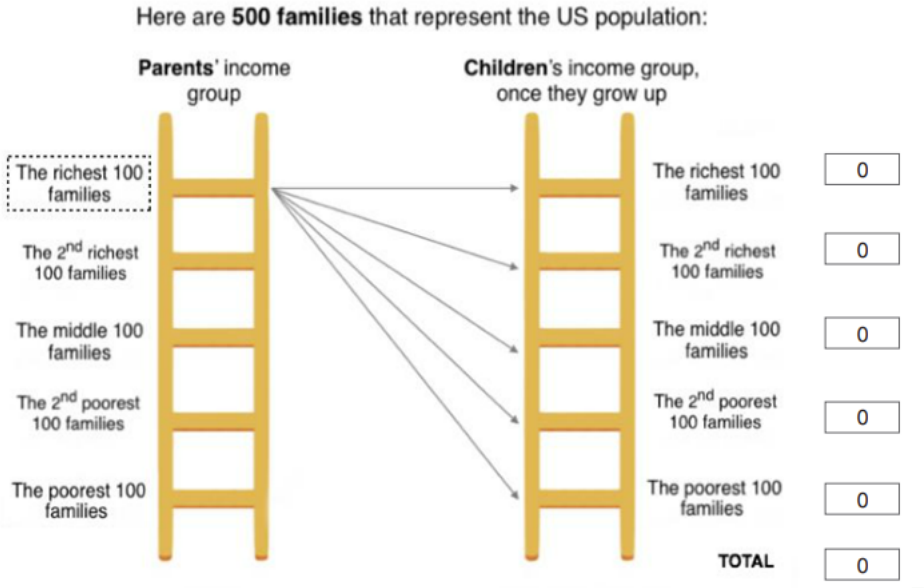
Close to zero; Low; Fairly low; Fairly high; High

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.



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 of 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 well pay off somewhat; They will not pay off at all]

109. [W1-W4] (If $\geq$ 1975 to Q3) Thinking of yourself, how likely is it that you will ever be among the top 20% richest household in the U.S., i.e., households which earn more than $130,000 per year?

Very likely; Likely; Somewhat likely; Not likely; Not likely; Not likely at all

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

14. 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	◯	◯	◯	◯	◯
[W1-W4] Improving the conditions of the poorest neighborhoods	◯	◯	◯	◯	◯
[W1-W4] Helping low income households pay for their health insurance and health care	◯	◯	◯	◯	◯
Spending more on defense and national security	◯	◯	◯	◯	◯
Spending more on infrastructure	◯	◯	◯	◯	◯

15. 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)

16. 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

17. 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

18. 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	○	○	○	○
Higher unemployment	○	○	○	○
Making it harder to keep the country united	○	○	○	○
Higher crime rates	○	○	○	○
Making the country more open to new ideas and cultures	○	○	○	○
People born in the US losing their jobs	○	○	○	○

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 sa now; Decreased a little; Decreased a lot

19. 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

20. 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

21. 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

22. 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	○	○	○	○
[W1-W4] To have American citizenship	○	○	○	○
[W1-W4] To have lived in America for most of one's life	○	○	○	○
[W1-W4] To be able to speak English	○	○	○	○
To be a Christian	○	○	○	○

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

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

23. 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

24. 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)

25. 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	◯	◯	◯	◯
Experienced feeling down, depressed or hopeless	◯	◯	◯	◯

26. 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*

27. 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]

28. 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

29. 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