

SOCIAL SCIENCES

The politics of zero-sum thinking: The relationship between political ideology and the belief that life is a zero-sum game

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The tendency to see life as zero-sum exacerbates political conflicts. Six studies ($N = 3223$) examine the relationship between political ideology and zero-sum thinking: the belief that one party's gains can only be obtained at the expense of another party's losses. We find that both liberals and conservatives view life as zero-sum when it benefits them to do so. Whereas conservatives exhibit zero-sum thinking when the status quo is challenged, liberals do so when the status quo is being upheld. Consequently, conservatives view social inequalities—where the status quo is frequently challenged—as zero-sum, but liberals view economic inequalities—where the status quo has remained relatively unchallenged in past decades—as such. Overall, these findings suggest potentially important ideological differences in perceptions of conflict—differences that are likely to have implications for understanding political divides in the United States and the difficulty of reaching bipartisan legislation.

The politics of zero-sum thinking

"I am talking about a war being waged by some of the wealthiest and most powerful people against working families, against the disappearing and shrinking middle class of our country. The billionaires of America are on the warpath."

–Bernie Sanders

"[Mexican immigrants] are taking our jobs. They're taking our manufacturing jobs [...] They're killing us."

–Donald Trump

INTRODUCTION

The question underlying many heated political debates is who stands to win and who stands to lose from a proposed policy. Would a given policy benefit all citizens, or would it benefit some at the expense of others? Would a proposed course of action expand the proverbial pie, or would it simply reallocate a fixed amount of resources such that some people's gains are offset by other people's losses? Among conservatives, it is often believed that tax cuts, deregulation, and privatization encourage economic growth and, therefore, benefit all (or most) Americans. In contrast, liberals tend to argue that such policies often benefit only a select few (e.g., large corporations and the wealthiest Americans) at the expense of many others (e.g., small business owners and unskilled workers). More generally, whereas conservatives typically think about many economic issues in non-zero-sum terms (i.e., that wealthy people's gains lead to economic growth that eventually "trickles down" to less well-off individuals), liberals commonly view such issues as zero-sum (i.e., that wealthy people's gains come at the expense of less well-off individuals).

This observation, however, flies in the face of research showing that conservatives are more prone, not less prone, to zero-sum thinking. Whereas liberals often believe that social policies that support underprivileged groups benefit society as a whole, conservatives tend to view the gains of some groups (e.g., women, African-Americans, and immigrants) as offset by other groups' losses (e.g., men, European-Americans, and U.S. citizens). Conservatives, for example, are more likely to believe that expanding civil rights for minorities comes at the expense of the majority (1) and that increasing job opportunities for women diminishes opportunities for men (2).

How can it be that conservatives are both more prone and less prone to view the world in zero-sum terms? More generally, how does political ideology relate to zero-sum thinking?

We argue that both liberals and conservatives view life as zero-sum when it benefits them to do so. Zero-sum thinking, we suggest, is not linked to a specific political ideology but rather reflects a motivated process that allows both liberals and conservatives to maintain their ideological beliefs (3–5). Specifically, we suggest that conservatives are more susceptible to zero-sum thinking when the status quo in society is being challenged but that liberals are more susceptible to zero-sum thinking when the status quo is being upheld.

Our argument builds upon research showing ideological differences in perceptions of the status quo. Relative to liberals, conservatives tend to view existing social hierarchies as more legitimate, are more tolerant of social and economic inequalities, and are more willing to preserve the status quo [6–9; see (10) for a comprehensive review]. Because losses are more emotionally impactful than equivalent gains (11), one way of defending the status quo is by focusing on the potential losses that would arise from challenging it. Emphasizing how challenging the status quo leads to various undesirable outcomes may bolster conservatives' beliefs about the legitimacy of the current state of affairs as well as help them rally others' support for their own position. As a consequence, conservatives should be especially prone to view challenges to the status quo (e.g., demographic shifts, civil right movements, and proimmigration policies) as zero-sum.

In contrast, liberals are more inclined to question social hierarchies, are less accepting of inequalities, and are more prone to challenging existing social structures. To challenge the status quo, liberals may therefore be motivated to focus on the potential losses associated with maintaining it.

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Focusing on how the status quo imposes losses on various groups and/or individuals may therefore strengthen liberals' views of the status quo as illegitimate and help them rally others' support for changing it. As a consequence, liberals should be prone to view existing social structures—and any attempt to preserve the current status quo—as zero-sum.

The belief that life is a zero-sum game

Although pure zero-sum situations are rare (12, 13), many people perceive non-zero-sum situations as zero-sum, believing that one person's gains are balanced by another person's losses (14, 15). In negotiations, for instance, both parties typically assume that their interests are opposed to the other side's interests, making it difficult to achieve mutually beneficial agreements (16, 17). These zero-sum assumptions often pervade political debates, ranging from gender and race relations to immigration. For example, many white Americans believe that the decrease in anti-black prejudice has been offset by an increase in anti-white prejudice (18) and that rising immigration threatens the economic well-being of North American employees (19). Similarly, many men believe that the decrease in gender discrimination against women has been offset by an increase in discrimination against men (1, 2).

Zero-sum thinking is associated with various adverse consequences. Negotiators who assume that their interests are opposed to their counterparts' interests frequently overlook possibilities for mutually beneficial agreements (20), discredit advantageous offers proposed by the other side (21), and consequently fail to reach "win-win" resolutions (22). Employees who view success as zero-sum (such that every person's accomplishments come at their co-workers' expense) are more likely to act selfishly and less likely to help their colleagues (23). More generally, zero-sum thinking reduces interpersonal trust and increases people's feeling that they are being taken advantage of and that the social system is illegitimate and unjust (14).

The adverse consequences of zero-sum thinking are especially prevalent in U.S. politics, where erroneous assumptions about opposing interests interfere with reaching bipartisan legislation. For example, both liberals and conservatives often overlook the extent to which their values are shared by the other side and assume that their political interests are incompatible with the other side's interests (24). In contrast, when political opponents voice their beliefs before discussing the issues at hand, they are more likely to identify their shared interests and reach mutually beneficial agreements.

In six studies, we examined the effect of political ideology on the belief that life is zero-sum. We hypothesized that the effect of ideology on zero-sum thinking would depend on whether the status quo is being challenged or upheld. Specifically, we predicted that conservatives would exhibit zero-sum thinking when considering challenges to the status quo but that liberals would exhibit zero-sum thinking when the status quo is being upheld. Study 1 examines the relationship between ideology and zero-sum thinking about the economic distribution of wealth, where the status quo has remained relatively unchallenged for decades (25). Study 2 examines how ideology relates to zero-sum thinking about racial and gender relations (where the status quo is frequently challenged) versus the economic distribution of wealth (where the status quo has been maintained). Study 3 examines the link between ideology and an especially pernicious aspect of zero-sum thinking—the (often implicit) assumption of interest incompatibility (16). Last, studies 4, 5A, and 5B examine the relationship between political ideology and zero-sum thinking in the face of potential challenges to the status quo versus when the status quo is being upheld.

RESULTS

Study 1

The rise of economic inequality in the United States (25) has created a status quo with regard to the distribution of wealth, where people typically remain in the same socioeconomic status throughout their lives (26). To examine how ideology influences zero-sum thinking about this issue, we analyzed individual-level data from 2128 Americans in the sixth wave of the World Value Survey (27). The two variables of interest were respondents' political views ("In political matters, people talk of 'the left' and 'the right.' How would you place your views on this scale, generally speaking?") and their tendency to think about the economy in zero-sum terms. This latter variable was measured with a single item that asked respondents, on a 10-point scale, the extent to which they believe that "People can only get rich at the expense of others" versus "Wealth can grow so there's enough for everyone." Given the relationship between socioeconomic status and zero-sum thinking (14, 28), we also controlled for respondents' income and social class.

Consistent with our hypothesis, we found a negative relationship between conservatism and zero-sum thinking [$\beta = -0.32, t(2127) = -13.69, P < 0.001$]. The more respondents identified as being on the right side of the political spectrum, the less they viewed the distribution of wealth as zero-sum. In contrast, the more respondents identified as being politically left leaning, the more zero-sum thinking they exhibited and the more they believed people can only get rich at others' expense. Moreover, the negative relationship between conservatism and zero-sum thinking remained significant even when controlling for income and social class [$\beta = -0.30, t(2092) = -12.84, P < 0.001$] (see table S1).

These results suggest that political ideology is significantly correlated with the extent to which people view the distribution of wealth as zero-sum. Yet, because the World Value Survey only examines zero-sum thinking as it relates to economic issues, we could not investigate a crucial aspect of our prediction: that the relationship between ideology and zero-sum thinking depends on whether the status quo is challenged versus maintained. Therefore, in study 2, we examined how ideology relates to zero-sum thinking about social issues (where the status quo in the United States is frequently challenged) versus economic issues (where the status quo has remained typically unchallenged).

Study 2

We randomly assigned 199 participants from Amazon's Mechanical Turk to one of two conditions. In the maintained status quo condition, we examined the extent to which participants viewed the economic distribution of wealth as zero-sum using an adapted version of the Belief in a Zero-Sum Game Scale [e.g., "If someone gets richer, it means that somebody else gets poorer"; (14)]. In the challenged status quo condition, we examined the extent to which participants viewed two social issues where the status quo is frequently challenged—gender relations and racial relations—in zero-sum terms [e.g., "As women face less sexism, men end up facing more sexism" and "Less discrimination against minorities means more discrimination against whites"; (1, 2)]. Last, participants reported their political ideology, household income, socioeconomic status, and various demographics.

Replicating study 1, we found in the maintained status quo condition a negative relationship between conservatism and zero-sum thinking [$r(98) = -0.27, P < 0.001$]. This relationship, however, was reversed in the challenged status quo condition. Whereas conservatives were less prone than liberals to view the economic status quo as zero-sum, they were more prone to view social challenges to the status quo as

such [$r(101) = 0.61, P < 0.001$]. The interaction between ideology and condition (maintained status quo versus challenged status quo) was significant [$F(3, 198) = 56.06, P < 0.001$] (Fig. 1) and remained significant even when controlling for income, socioeconomic status, and other demographics. Thus, liberals exhibit more zero-sum thinking when the status quo is maintained (i.e., rising economic inequality), but conservatives exhibit more zero-sum thinking when the status quo is being challenged (i.e., diminishing social inequality).

Study 3

Studies 1 and 2 examined the relationship between ideology and the belief that one party's gains are offset by another party's losses. Zero-sum thinking, however, involves not just an assumption about the distribution of resources but also an assumption about the incompatibility of interests (16). To examine how ideology influences this specific aspect of zero-sum thinking, we randomly assigned 200 participants to one of two conditions. In the maintained status quo condition, participants indicated the extent to which probusiness policies (i.e., policies that typically maintain the status quo) also serve the interests of the average American citizen. In the challenged status quo condition, participants indicated the extent to which proimmigration policies (i.e., policies that typically challenge the status quo) also serve the average American's interests. Participants chose their responses from a series of seven increasingly overlapping circles, each depicting the involved parties' interests. Afterward, participants reported their political ideology, household income, socioeconomic status, and various demographics.

As predicted, political ideology was significantly correlated with the extent to which participants viewed probusiness and proimmigration policies as compatible with the average American's interests. Although conservatism was negatively associated with zero-sum thinking about

policies that maintain the status quo (i.e., probusiness policies) [$r(101) = -0.44, P < 0.001$], it was positively associated with zero-sum thinking about policies that challenge it (i.e., proimmigration policies) [$r(99) = 0.35, P < 0.001$]. Compared with liberal participants, conservatives were more likely to view probusiness interests as compatible with the interests of the average American but less likely to view proimmigration interests as such. The interaction between ideology and condition was significant [$F(3, 199) = 36.16, P < 0.001$] (Fig. 2) and remained significant even when controlling for income, socioeconomic status, and other demographics.

So far, we have shown that both liberals and conservatives exhibit zero-sum thinking when doing so protects their ideological beliefs. Whereas conservatives view challenges to the status quo as zero-sum, liberals are more prone to zero-sum thinking when the status quo is being upheld. This suggests that, regardless of the topic at hand, the tendency to view life as zero-sum would depend on whether people are focused on the challenges facing the status quo. Thus, conservatives should be more prone to zero-sum thinking when an issue is framed in terms of challenging the status quo, but liberals should be more prone to zero-sum thinking when the same issue is framed in terms of maintaining the status quo.

We tested this hypothesis in two ways. In study 4, we examined how ideology relates to zero-sum thinking about economic gains that either maintain or challenge existing social hierarchies. In studies 5A and 5B, we examined how ideology is related to zero-sum thinking about social dynamics that either preserve or challenge the status quo.

Study 4

Although the status quo is typically preserved by an unequal distribution of wealth (25), the accumulation of wealth by members of historically underprivileged groups has the potential to challenge it

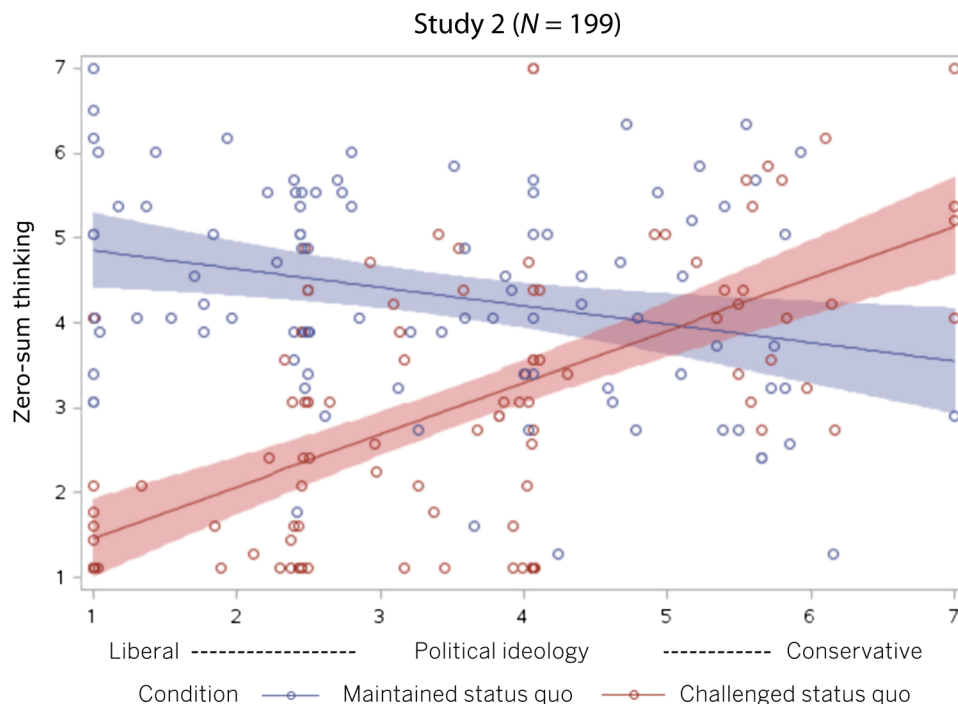


Fig. 1. Liberals' and conservatives' zero-sum thinking about wealth distribution (maintained status quo condition) and gender and racial relations (challenged status quo condition) in the United States (study 2).

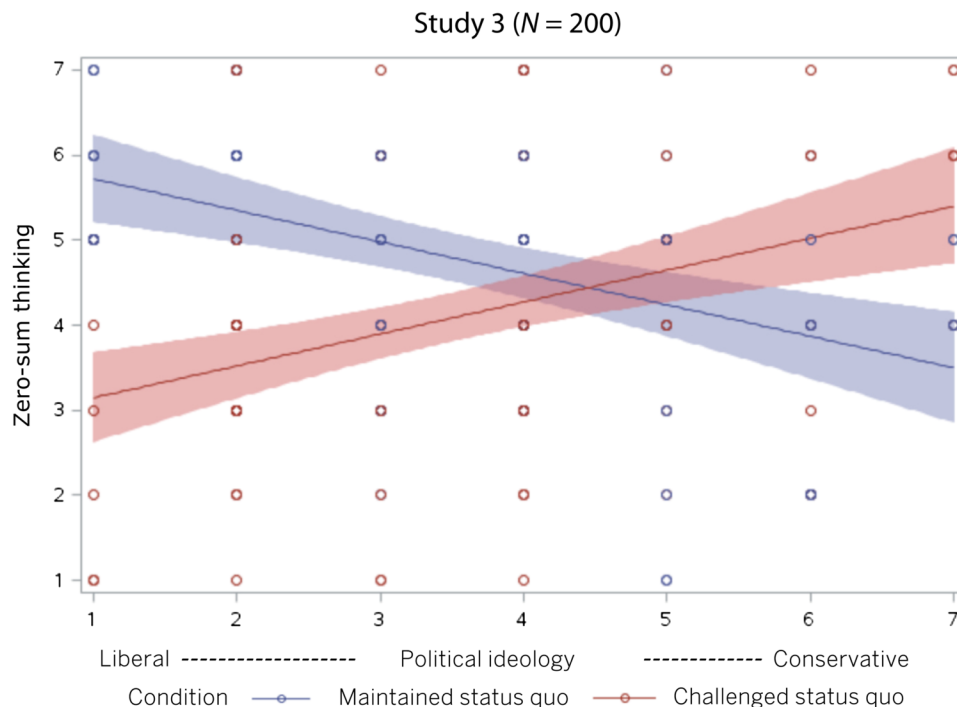


Fig. 2. Liberals' and conservatives' zero-sum thinking about probusiness policies (maintained status quo condition) and proimmigration policies (challenged status quo condition) in the United States (study 3).

[e.g., (29, 30)]. This suggests that whether liberals and conservatives view the distribution of wealth as zero-sum would depend on whether it maintains the status quo (i.e., sustains or increases current economic disparities) or whether it challenges it (i.e., diminishes current economic disparities). To examine this hypothesis, we randomly assigned 186 U.S.-born citizens from Amazon's Mechanical Turk to one of two conditions. In the maintained status quo condition, participants indicated how much they agreed with four zero-sum statements relating to economic gains that preserve the status quo (e.g., "The wealth of a few is acquired at the expense of many"). In the challenged status quo condition, participants were presented with four similar items relating to economic gains that potentially challenge the status quo by benefitting members of an underprivileged group (e.g., "The wealth of a few immigrants is acquired at the expense of many U.S. born citizens"). All participants then indicated their political ideology, income, socioeconomic status, and other demographics.

As predicted, the relationship between political ideology and zero-sum thinking was influenced by whether economic gains potentially maintained or challenged the status quo. Whereas conservatism was negatively associated with zero-sum thinking in the maintained status quo condition [$r(89) = -0.46, P < 0.001$], it was positively associated with zero-sum thinking in the challenged status quo condition [$r(97) = 0.27, P < 0.05$]. Compared with liberal participants, conservatives were less prone to view economic gains by the rich (which maintain the status quo) as zero-sum but more prone to view economic gains by underprivileged groups (which challenge the status quo) as such. Although participants exhibited more zero-sum thinking in the maintained status quo condition (mean = 4.25, SD = 1.41) than the challenged status quo condition [mean = 3.42, SD = 1.25; $F(3, 185) = 57.70, P < 0.001$], the interaction

between ideology and condition was significant [$F(3, 185) = 30.27, P < 0.001$] and remained significant even when controlling for income, socioeconomic status, and other demographics.

Studies 5A and 5B

In the final two studies, we increase experimental control by assigning participants to think about the same social issue (study 5A) or the same economic issue (study 5B) in terms of maintaining or challenging the status quo. In study 5A, we recruited 296 participants from Amazon's Mechanical Turk and examined whether they thought about an important social issue—racial relations in the United States—in zero-sum terms. In the challenged status quo condition, we examined whether participants viewed diminishing racial inequalities as zero-sum (e.g., "The easier it is for black students to gain admission to college, the more it becomes difficult for white students to get admitted"). In contrast, in the maintained status quo condition, we examined whether participants viewed trends that maintain racial inequalities as zero-sum (e.g., "The easier it is for white students to gain admission to college, the more it becomes difficult for black students to get admitted"). We predicted that even when thinking about the same issue, conservatives would exhibit more zero-sum thinking than liberals about challenges to the status quo but that the opposite would be true when the status quo is maintained.

Study 5B followed a similar design. We asked 197 participants whether they viewed a specific economic issue—the relationship between employers' profits and their subordinates' benefits—as zero-sum. In the challenged status quo condition, we examined whether participants viewed potential challenges to existing employer-employee dynamics as zero-sum (e.g., "Employees who demand higher wages often don't realize that it comes at the expense of their

employer's profit margins"). In contrast, in the maintained status quo condition, we examined whether they viewed preserving the employer-employee hierarchy as such (e.g., "Employers who demand higher profit margins often do not realize that it comes at the expense of their employees' wages"). We predicted that conservatives would exhibit more zero-sum thinking about challenges to the status quo but that liberals would exhibit more zero-sum thinking about moves to preserve the status quo.

As predicted, conservatism was positively related to zero-sum thinking when the status quo was being challenged [$r_{\text{Study 5A}}(147) = 0.35$, $P < 0.001$; $r_{\text{Study 5B}}(97) = 0.44$, $P < 0.001$] but negatively related to zero-sum thinking when the status quo was maintained [$r_{\text{Study 5A}}(149) = -0.33$, $P < 0.001$; $r_{\text{Study 5B}}(100) = -0.17$, $P < 0.076$]. Although participants exhibited overall more zero-sum thinking when the status quo was maintained [$F_{\text{Study 5A}}(3, 295) = 59.07$, $F_{\text{Study 5B}}(3, 196) = 41.50$, $P_s < 0.001$], the interaction between ideology and condition (challenged status quo versus maintained status quo) was significant in both studies [$F_{\text{Study 5A}}(3, 295) = 39.68$, $F_{\text{Study 5B}}(3, 196) = 21.20$, $P_s < 0.001$] (Figs. 3 and 4) and remained significant even when controlling for income, socioeconomic status, and other demographics. Thus, regardless of the issue at hand, the effect of ideology on zero-sum thinking depends on whether the status quo is being challenged or upheld.

An alternative explanation for these results (which does not necessarily involve zero-sum thinking) may involve the fact that liberals are more prone than conservatives to side with historically underprivileged groups (e.g., African-Americans). For instance, because liberals tend to be more supportive of racial equality, they often believe that there has been less progress toward it than conservatives do (31) and may have therefore disagreed with the notion that black people gain at the expense of white people because they deny the premise of progress in the first place. To examine whether zero-sum thinking is distinct from simply siding with black Americans' fight for equality, we ran a conceptual replication of study 5A (see study S3) in which participants read statements depicting racial progress in a manner that suggests a zero-sum dynamic (e.g., "Since the early 1960s, the amount of influence that black people have in politics has expanded at the expense of the amount of influence that white people have") or in a manner that does not do so (e.g., "Since the early 1960s, the amount of influence that black people have in politics has expanded"). As in study 5A, when progress was depicted in a zero-sum manner, participants' beliefs were significantly correlated with their political ideology [$r(95) = 0.305$, $P < 0.0001$]. In contrast, when progress was not depicted in a zero-sum manner, beliefs about progress were not related to ideology [$r(95) = 0.062$, $P = 0.179$]. Thus, zero-sum thinking appears to have a unique link with ideology that goes beyond liberals' perceptions of progress or their tendency to side with underprivileged groups.

DISCUSSION

In six studies, we found that conservatives are more prone than liberals to view challenges to the status quo as zero-sum but that the opposite is true when the status quo is preserved. In addition, we found that the same issue can elicit zero-sum thinking among liberals and conservatives, depending on whether it is framed in terms of maintaining or challenging the status quo. Whereas liberals exhibit zero-sum thinking when issues are framed in terms of upholding current social structures, conservatives exhibit

zero-sum thinking when they are framed in terms of changing the status quo.

These findings highlight the role of ideology in shaping people's views of life as zero-sum. Rather than being a stable mindset associated with a specific ideology or worldview (14), we found that zero-sum thinking is exhibited across the political spectrum. When thinking about threats to the status quo, conservatives are susceptible to the same reasoning patterns for which they criticize liberals when the status quo is maintained, and vice-versa. As a result, political polarization can stem from liberals' and conservatives' diverging assumptions about interest incompatibility and the zero-sum nature of social and economic relationships.

This suggests that how an issue is talked about can predictably influence whether it would elicit zero-sum thinking. As shown in study 4, emphasizing how the distribution of wealth preserves the status quo decreases zero-sum thinking among conservatives while increasing such thinking among liberals. In contrast, emphasizing how the accumulation of wealth can challenge existing social structures achieves the opposite result. Similarly, studies 5A and 5B show that framing an issue in terms of challenges to the status quo increases zero-sum thinking among conservatives, whereas framing an issue in terms of maintaining existing social structures increases such thinking among liberals. Since many policies preserve some aspects of the status quo while challenging other aspects of it, politicians and policy-makers can (for better or for worse) strategically frame contentious policies in a manner that either increases or decreases zero-sum thinking among their constituents. For instance, many policies may be more likely to attain bipartisan support if framed in a manner that emphasizes the status quo when presented to conservative voters but in a manner that emphasizes the challenges to the status quo when presented to more liberal-leaning voters. Similarly, emphasizing how a proposed policy is not zero-sum (e.g., emphasizing how similar policies in the past had no effect on the majority group or may have even benefitted it) may help increase support for it.

This suggests that people may be motivated to view life as zero-sum both to preserve the integrity of their own beliefs and to convince others about them. By emphasizing how maintaining (or challenging) the status quo hurts many more people than one's opponents allow, people may become more confident in their own views and may be better situated to convince others of their position. Of course, it is possible that some people may adopt zero-sum rhetoric as a tool to convince others without genuinely accepting it as true. Although the current research focused on examining how ideological motivations relate to zero-sum thinking in general, it did not distinguish between when it is used as a way for bolstering one's own convictions versus as a tool for convincing others. Future research could examine whether people adopt zero-sum thinking as mere rhetoric without truly believing in it and the extent to which it is effective to do so.

It is important to note that despite the significant relationship between zero-sum thinking and people's political leanings, the tendency to view life as zero-sum involves beliefs that go beyond people's political ideology. Although we found a significant and systemic relationship between political ideology and zero-sum thinking, there was substantial variance among both conservatives and liberals in their tendency to view life as zero-sum. Whereas the majority (73.4%) of liberal participants exhibited zero-sum thinking consistent with their ideological stance (i.e., viewing the current status quo as zero-sum but challenges to the status quo as not

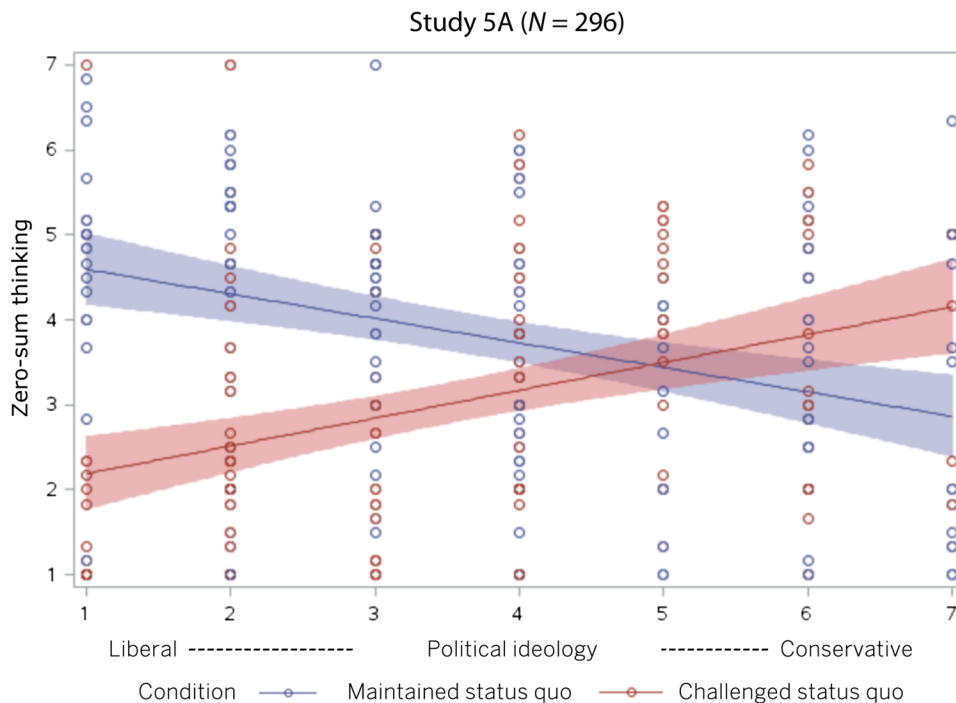


Fig. 3. Liberals’ and conservatives’ zero-sum thinking about social trends that preserve racial inequalities (maintained status quo condition) and that challenge racial inequalities (challenged status quo condition) in the United States (study 5A).

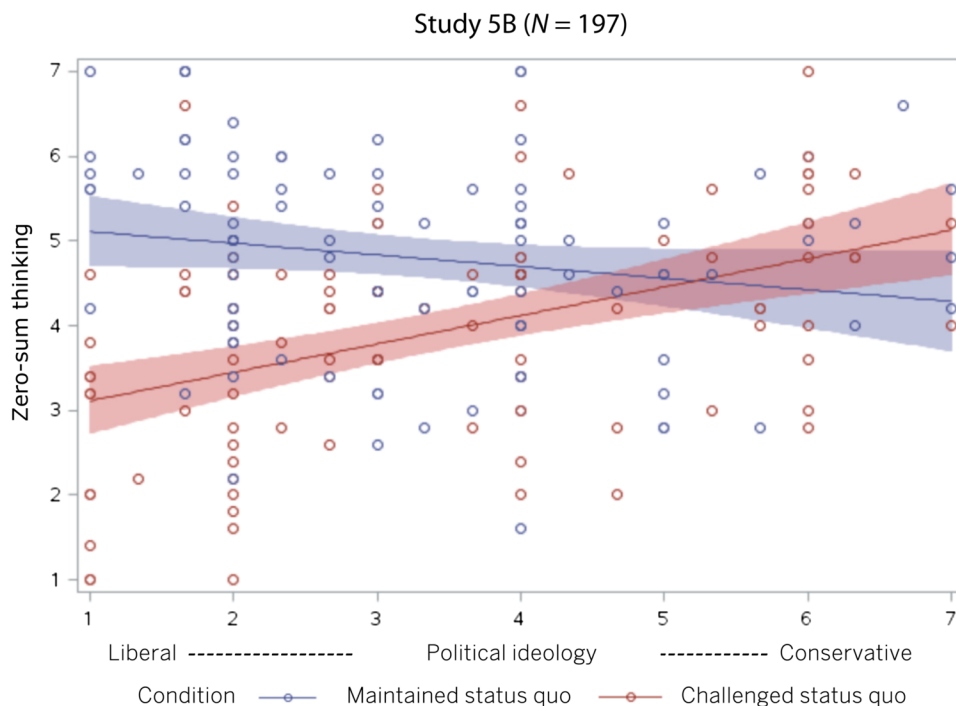


Fig. 4. Liberals’ and conservatives’ zero-sum thinking about preserving existing employer-employee dynamics (maintained status quo condition) and moves that challenge employer-employee dynamics (challenged status quo condition) (study 5B).

zero-sum), a substantial minority of liberals (26.4%) did not do so. Similarly, whereas most conservative participants (56.9%) exhibited “ideologically consistent” zero-sum thinking patterns (i.e., viewing

challenges to the status quo as zero-sum but the existing status quo as not zero-sum), many conservatives (43.1%) did not do so (see fig. S1 and table S2).

Zero-sum thinking also has a unique effect in its ability to predict people’s attitudes about important societal issues above and beyond their political ideology. In two additional studies (studies S1 and S2), we examined the extent to which zero-sum thinking predicts attitudes about economic inequality and anti-immigration policies. In the first study, we measured, in a counterbalanced order, participants’ tendency to view wealth as a zero-sum resource (14) and their attitudes regarding inequality using the Support for Economic Inequality Scale (32). As predicted, we found that zero-sum thinking was negatively related to the extent to which participants viewed economic inequality favorably [$r(100) = -0.659, P < 0.0001$]. The more participants believed that wealth was a zero-sum resource, the more they opposed inequality. A multiple regression analysis predicting attitudes toward inequality from political ideology and the tendency to view wealth as zero-sum found that zero-sum thinking remained a significant predictor of support for inequality beyond participants’ ideology [$\beta_{\text{zero-sum thinking}} = -0.531, t(98) = -6.69, P < 0.0001$; $\beta_{\text{ideology}} = 0.269, t(98) = 4.54, P < 0.0001$].

Moreover, including zero-sum thinking as a predictor in this model increased the explained variance in attitudes from $R^2 = 32\%$ to $R^2 = 53\%$.

We replicated this finding in a second study, where we examined the relationship between zero-sum thinking and attitudes toward anti-immigration policies (study S2). In this study, we measured, in a counterbalanced order, participants’ tendency to view immigration as zero-sum, their support for various anti-immigration policies (e.g., building a wall in the U.S.-Mexico border, indefinitely detaining illegal immigrants until deportation), their prejudice against Mexican immigrants, and their tendency to blatantly dehumanize immigrants as savage, aggressive, and lacking basic morals. As expected, we found that zero-sum thinking significantly predicted support for tough anti-immigration policies [$r(102) = 0.594, P < 0.0001$]. The more participants viewed immigration as zero-sum, the more they supported taking a tough stance against immigration. We found that viewing immigration as zero-sum uniquely predicted support for anti-immigration policies [$\beta = 0.551, t(98) = 6.24, P < 0.0001$] above and beyond political ideology [$\beta = 0.556, t(100) = 7.95, P < 0.0001$], and including

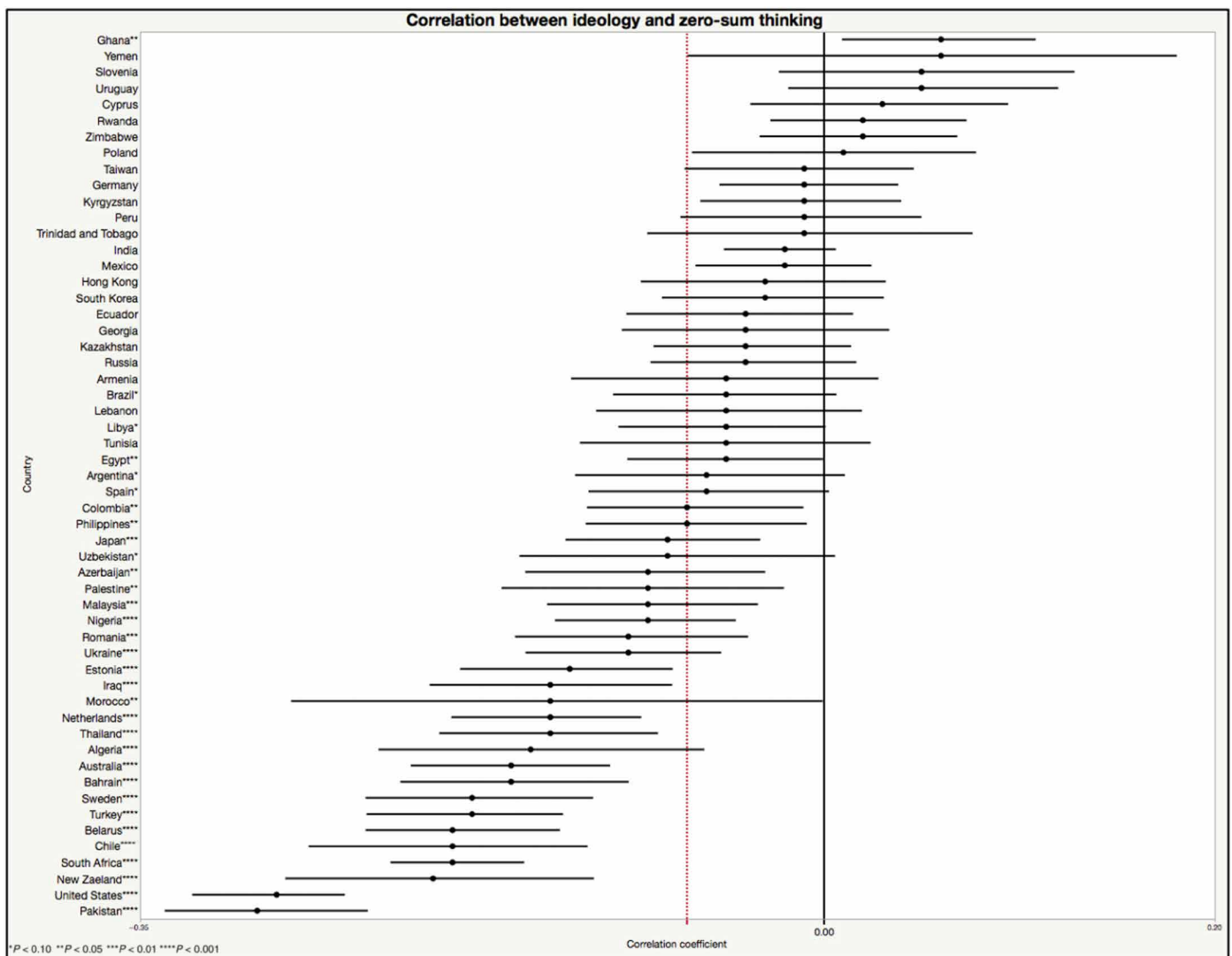


Fig. 5. The relationship between political ideology and zero-sum thinking about the distribution of wealth across 55 countries in the sixth wave of the World Value Survey.

zero-sum thinking in the model increased the explained variance in attitudes from $R^2 = 45\%$ to $R^2 = 60\%$. Furthermore, zero-sum thinking remained a significant predictor of support for anti-immigration policies [$\beta = 0.333$, $t(98) = 3.85$, $P = 0.0002$] even when we included in the model participants' prejudice against Mexican immigrants [$\beta = 0.012$, $t(98) = 2.19$, $P = 0.031$] and their tendency to blatantly dehumanize them [$\beta = 0.816$, $t(98) = 6.26$, $P < 0.0001$]. Thus, despite the significant relationship between zero-sum thinking and political ideology, viewing life as zero-sum uniquely predicts attitudes about important social issues beyond people's political leanings. Exploring when and why people view life as zero-sum can enrich our understanding of their attitudes beyond merely knowing their political ideology.

Future research would benefit from examining additional factors that, together with ideology, are related to zero-sum thinking. First, people may be more prone to view life as zero-sum after experiencing personal hardships. For example, it is possible that white applicants who fail to get into college are more likely to view racial relations as zero-sum than admitted applicants, that male candidates who do not get hired are more likely to view gender relations as zero-sum than hired candidates, that unemployed Americans are more likely to believe that immigrants take jobs away from U.S. citizens than employed Americans, and so forth. More generally, people may be especially prone to zero-sum thinking when comparing themselves to better-off others, which can help explain why upward comparisons exacerbate negative experiences (33–35). If people view their own (worse off) outcomes as having been caused by others' better outcomes, they can then blame others for their own circumstances and resent their good fortune.

Cultural differences may also influence zero-sum thinking. The relationship between ideology and zero-sum thinking about the distribution of wealth varies considerably between countries. Whereas conservatism is negatively related to zero-sum thinking in most of the countries included in the World Values Survey (27), the strength and significance of this relationship varies substantially. Of the 55 countries in which respondents indicated whether they viewed the distribution of wealth as zero-sum, the relationship between ideology and zero-sum thinking was significantly or marginally negative in 31 countries, insignificantly negative ($P > 0.10$) in 16 countries, insignificantly positive in 7 countries, and significantly positive in only 1 country (Fig. 5). Although ideology is clearly related to zero-sum thinking, cultural factors surely influence the extent to which people see life as zero-sum.

The current research offers insight into how ideology is related to people's interpretation of the world and may further our understanding of partisan divides in the United States. Although liberals and conservatives often agree on many economic and social goals, they tend to disagree on how to best achieve them. For example, people across the political spectrum share similar views regarding what an ideal society would look like in terms of economic inequality and social mobility (36, 37) but disagree on how to create such a society. Although these partisan differences typically stem from beliefs about who stands to win or lose from any given policy, our findings suggest that these beliefs are unexpectedly malleable. Paying closer attention to how we discuss politically divisive issues can be the first step in bridging this partisan divide.

MATERIALS AND METHODS

Study 1

A total of 2128 American participants (1041 males, 1087 females; age range, 18 to 93 years) took part in the sixth wave (2010–2014) of the

World Values Survey (27), a project that, since 1981, has collected representative samples of respondents in almost 100 countries. Political views were assessed with the following question: "In political matters, people talk of 'the left' and 'the right.' How would you place your views on this scale, generally speaking?" (1, left; 10, right). Zero-sum thinking about the distribution of wealth was measured on a 10-point scale onto which respondents indicated the extent to which they believe that "People can only get rich at the expense of others" versus "Wealth can grow so there's enough for everyone." We reversed scored this scale so that higher values indicate a greater tendency for zero-sum thinking. In addition, respondents reported their household income ("On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in the country. We would like to know in what group your household is. Please, specify the appropriate number, counting all wages, salaries, pensions, and other incomes that come in"; 1, lowest group; 10, highest group) and their subjective social class ("People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the?"; 1, upper class; 5, lower class). Further detailed information about the World Value Survey can be found at www.worldvaluessurvey.org/WVSDocumentationWV6.jsp.

Study 2

A total of 199 U.S. residents were recruited from Amazon's Mechanical Turk to participate in the study (107 males, 92 females; age range, 21 to 85 years). Participants were randomly assigned to either the maintained status quo condition or the challenged status quo condition. In the maintained status quo condition, we examined zero-sum thinking about the distribution of wealth in the United States—a domain where rising inequality and stagnant mobility rates have resulted in a relatively stable status quo. Participants indicated their level of agreement with six items adapted from the Belief in Zero-Sum Scale (14): "If someone gets richer, it means that somebody else gets poorer," "When some people are getting poorer, it means that other people are getting richer," "Life is so devised that when somebody gains, others have to lose," "Life is like a tennis game—a person wins only when others lose," "The wealth of a few is acquired at the expense of many," and "When the number of rich people increases in the country, the poorer people benefit as well" (reverse scored). In the challenged status quo condition, we examined zero-sum thinking about gender and racial relations in the United States—a domain where the status quo has historically been frequently challenged. Three items assessed perceptions of gender relations as zero-sum (19) ("As women face less sexism, men end up facing more sexism," "Less discrimination against women means more discrimination against men," and "Efforts to reduce discrimination against women have led to increased discrimination against men"), and three items assessed perceptions of racial relations as such (1) ("As blacks face less racism, whites end up facing more racism," "Less discrimination against minorities means more discrimination against whites," and "Efforts to reduce discrimination against minorities have led to increased discrimination against whites"). Responses were made on a 7-point Likert scale ranging from strongly agree (1) to strongly disagree (7) (Cronbach's $\alpha = .84$ and $.93$, respectively).

Political orientation ("How would you describe your political orientation?") was measured using a sliding scale anchored at "very liberal" on the left and "very conservative" on the right, socioeconomic status was measured using the MacArthur Scale of Subjective Social

Status (38), and household income was measured with a 12-point scale (ranging from <\$10,000 to >\$150,000). Last, participants reported their age, gender, level of education, and ethnicity.

Study 3

Two hundred U.S. residents were recruited from Amazon's Mechanical Turk to participate in the study (86 males, 111 females, 3 other; age range, 19 to 72 years). Participants were randomly assigned to either the maintained status quo condition or the challenged status quo condition. In the maintained status quo condition, we examined zero-sum thinking about policies that preserve existing economic and social structures. Participants were instructed to "think about policies that are specifically crafted to serve the interests of businesses and corporations" and were asked: "To what extent do pro-business policies also serve the interests of the average American citizen?" They were presented with seven pairs of increasingly overlapping circles—one labeled "policies that benefit businesses and corporations" and one labeled "policies that benefit the average American citizen"—and selected the pair that most closely reflected the compatibility of interests between the two types of policy. In the challenged status quo condition, we examined zero-sum thinking about policies that typically challenge existing social hierarchies. Participants were instructed to "think about policies that are specifically crafted to serve the interests of immigrants to the U.S." and were asked: "To what extent do pro-immigration policies also serve the interests of the average American citizen?" They were presented with seven pairs of increasingly overlapping circles—one labeled "policies that benefit immigrants in the U.S." and one labeled "policies that benefit the average American citizen"—and selected the pair that most closely reflected the compatibility of interests between the two types of policy. Political orientation was measured on a 7-point Likert scale ("How would you describe your political orientation?"; 1, very liberal; 7, very conservative), and subjective socioeconomic status and household income were measured using the same measures from study 2. Last, participants reported their age, gender, level of education, and ethnicity.

Study 4

Two hundred three U.S. residents were recruited from Amazon's Mechanical Turk to participate in a preregistered study (<http://aspredicted.org/blind.php?x=at6gk6>). Seventeen non-U.S.-born participants were excluded from analyses, leaving a final sample of 186 (93 males, 92 females, 1 other; age range, 19 to 75 years). Participants were randomly assigned to either the maintained status quo condition or the challenged status quo condition. In the maintained status quo condition, we examined zero-sum thinking about economic gains that preserve existing social structures: "If someone gets richer, it means that somebody else gets poorer," "When some people are getting richer, it means that other people are getting poorer," "The wealth of a few is acquired at the expense of many," and "When the number of rich people increases in the country, the poorer people benefit as well" (Cronbach's $\alpha = .76$). In the challenged status quo condition, we examined zero-sum thinking about economic gains that challenge existing social structures using four equivalent statements framed around the topic of immigration: "If some immigrants get richer, it means that other U.S.-born citizens are getting poorer," "When some U.S. born citizens are getting poorer, it means that some immigrants to the U.S. are getting richer," "The wealth of a

few immigrants is acquired at the expense of many U.S. born citizens," and "When the number of rich immigrants increases in the country, the poorer U.S. born citizens benefit as well" (Cronbach's $\alpha = .66$). Political orientation, subjective socioeconomic status, and household income were measured using the same measures from study 3. Last, participants reported their age, gender, level of education, and ethnicity.

Study 5A

Two hundred ninety-six U.S. residents were recruited from Amazon's Mechanical Turk to participate in the study (141 males, 154 females; age range, 18 to 77 years). Participants were randomly assigned to either the challenged status quo condition or the maintained status quo condition. In the challenged status quo condition, we examined zero-sum thinking about potential challenges to the status quo in the United States: "The more black people are able to get into positions of power, the more white people lose their status in society," "The easier it is for black students to gain admission to college, the more it becomes difficult for white students to get admitted," "The more resources the government spends on predominantly black regions in the U.S., the less it spends on predominantly white regions," "The more influence black people have in politics, the less influence white people have in politics," "When black people move up in society, they do so at the expense of white people," and "The easier it is for black people to get high-paying jobs, the more difficult it becomes for white people to get the same jobs" (Cronbach's $\alpha = .95$). In the maintained status quo condition, we examined zero-sum thinking about trends that uphold and maintain the status quo: "The more white people are able to get into positions of power, the more black people lose their status in society," "The easier it is for white students to gain admission to college, the more it becomes difficult for black students to get admitted," "The more resources the government spends on predominantly white regions in the U.S., the less it spends on predominantly black regions," "The more influence white people have in politics, the less influence black people have in politics," "When white people move up in society, they do so at the expense of black people," and "The easier it is for white people to get high-paying jobs, the more difficult it becomes for black people to get the same jobs" (Cronbach's $\alpha = .94$). Political orientation, subjective socioeconomic status, and household income were measured using the same measures from study 3. Last, participants reported their age, gender, level of education, and ethnicity.

Study 5B

One hundred ninety-seven U.S. residents were recruited from Amazon's Mechanical Turk to participate in the study (101 males, 93 females, 3 other; age range, 18 to 72 years). Participants were randomly assigned to either the challenged status quo condition or the maintained status quo condition. In the challenged status quo condition, we examined zero-sum thinking about potential challenges to the status quo as it relates to employer-employee relations: "Employees who demand higher wages often don't realize that it comes at the expense of their employer's profit margins," "The more companies pay their factory workers, the less they can pay their managers," "When employees demand more benefits, it often comes at the expense of their employers' profits," "When employees focus on increasing their wages, they often cut into their companies' profits," and "The push to increase wages will inevitably hurt business profits" (Cronbach's $\alpha = .83$). In the maintained status quo

condition, we examined zero-sum thinking about moves to maintain the status quo as it relates to employer-employee relations: “Employers who demand higher profit margins often don’t realize that it comes at the expense of their employees’ wages,” “The more companies pay their managers, the less they can pay their factory workers,” “When employers demand more profits, it often comes at the expense of their employees’ benefits,” “When employers focus on increasing their companies’ profits, they often cut into their employees’ wages,” and “The push to increase business profits will inevitably hurt wages” (Cronbach’s $\alpha = .82$). Political orientation was measured with three 7-point scales [“In general, how would you describe your political orientation?” “How would you describe your political orientation when it comes to social issues?” and “How would you describe your political orientation when it comes to fiscal (economic) issues?”] (Cronbach’s $\alpha = .96$). Subjective socioeconomic status and household income were measured using the same measures from study 2. Last, participants reported their age, gender, level of education, and ethnicity.

Institutional review board

This project was approved by the Institutional Review Board at The New School for Social Research (no. 2018-1036). Before participation, participants in studies 2 to 5 provided their informed consent.

SUPPLEMENTARY MATERIALS

Supplementary material for this article is available at <http://advances.sciencemag.org/cgi/content/full/5/12/eaay3761/DC1>

Study S1. Zero-sum thinking, political ideology, and support for economic inequality.

Study S2. Zero-sum thinking, political ideology, anti-immigrant sentiment, blatant dehumanization, and support for anti-immigration policy.

Study S3. Distinguishing between zero-sum thinking and belief in social progress.

Table S1. Dependent variable: Zero-sum thinking.

Table S2. Number (and percentage) of liberal and conservative participants who exhibited and did not exhibit zero-sum thinking in each condition of studies 2, 4, 5A, and 5B.

Fig. S1. The percentage of liberal and conservative participants who exhibited “ideologically consistent” and “ideologically inconsistent” zero-sum thinking patterns (studies 2, 4, 5A, and 5B).
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