Not All is Loss: Class-Based Zero-Sum Beliefs Foster Working-class Solidarity and Support for Redistributive Policy

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All materials, measures, preregistrations, analysis scripts, and de-identified data are available on the Open Science Framework:
https://osf.io/abtsg/?view_only=8e212b8990a846caae6e67aac4b12357

Funding: This research was funded by the second author's institutional research fund.

Author contributions: DB & NDB contributed to conceptualization; DB contributed to formal analysis; NDB contributed to funding acquisition; DB & NDB contributed to investigation; DB & NDB contributed to methodology; DB & NDB contributed to project administration; NDB supervised the research; DB & NDB contributed to visualization; DB & NDB contributed to writing of the manuscript.

Wordcount
Abstract: 250
Introductions and discussions: 4827

Abstract

How can working-class solidarity grow in the face of existential economic threat? Existing research highlights zero-sum beliefs as divisive forces that fuel intergroup competition and resistance to equality. We propose a different possibility: zero-sum beliefs about class (i.e., that upper-class gains come at the expense of the working class), promote solidarity with the working class and drive support for redistributive policy. Across five studies (N = 2,442), using correlational, experimental, and longitudinal designs, we find consistent support for this model. In Study 1 (N = 590), class-based zero-sum beliefs predicted working-class solidarity and policy support, above and beyond alternative explanations. In Study 2 (N = 491), experimentally manipulating class-based zero-sum beliefs led to increased working-class solidarity. Study 3 (N = 392) showed that this effect depended on the framing of the zero-sum relationship: solidarity emerged only when class zero-sum beliefs emphasized that the upper class gains at the expense of the working class, not the reverse. Study 4 (N = 200) demonstrated that racial zero-sum beliefs moderated the relationship between class zero-sum beliefs and solidarity, nullifying the effect of class-based zero-sum beliefs on cross-race working-class solidarity. Finally, Study 5 (N = 769 swing voters) utilized a longitudinal design during the 2024 Presidential Election to show that class-based zero-sum beliefs predicted support for a candidate viewed as aligned with working-class interests. Together, these findings reveal that class zero-sum beliefs foster working-class solidarity and support for redistributive change, documenting a novel pathway through which disadvantaged groups may respond to existential economic threat.

Keywords: zero-sum beliefs; working-class solidarity; redistributive policy; racial divides; presidential elections.

Introduction

Consider this paradox: The majority of Americans face an economic reality that threatens their long-term financial security and prosperity, yet structural redistributive policy changes remain elusive. Roughly 100 million Americans are in medical debt (Consumer Financial Protection Bureau, 2024), 44% of full-time American workers earn less than their local living wage (Dayforce, 2024), and nearly half of all renter households spend more than 30% of their incomes on housing (U.S. Census Bureau, 2024). These figures are not temporal anomalies; they reflect a decades-long trend in which basic necessities such as housing, health care, and education have increasingly become unaffordable for working-class Americans (Anytime Estimate, 2023; Healthcare System Tracker, 2024; Education Data Initiative, 2024). Despite this collective precarity, Americans largely acquiesce. According to recent data from the World Values Survey, only 14% of Americans support a radical change to the way society is organized (Haerpfer et al., 2022)[1], and many working-class voters continue to support politicians and policies that sustain, rather than redress, economic inequality (e.g., Cooley et al., 2024; see Thomas, 2004).

Extensive research in social and political psychology has offered important explanations for this paradoxical feature of U.S. society. System justification theory argues that people are psychologically motivated to view existing social arrangements as fair, just, and legitimate (Jost & Banaji, 1994; Jost & van der Toorn, 2012), even when doing so conflicts with their own group interests (Jost et al., 2003A). Furthermore, political conservatism and right-wing authoritarianism reinforce resistance to change through increased preferences for order, conformity, and deference to authority (e.g., Altemeyer, 1981; Jost et al., 2003B). Additionally, social dominance theory

[1] This figure was calculated from 2,554 U.S.-American respondents in Wave 7 (2018-2022) of the World Values Survey (see Appendix 1 in the Supplemental Material).

argues that individuals' preference for intergroup hierarchies can lead to internalizing group-based dominance as natural or necessary (Pratto et al., 1994; see Sidanius & Pratto, 2012). While these theoretical perspectives shed light on why people rationalize or defend inequality, they offer less insight into when and how economically disadvantaged individuals develop a stronger sense of solidarity around shared material conditions—specifically, their social class. In the current work, we address this gap by investigating the possibility that zero-sum beliefs foster solidarity amongst the working class, rather than foment division within it.

We argue that class-based zero-sum beliefs—the belief that upper-class gains come at the expense of the working class—predict increased support for redistributive policy because they increase solidarity with the working class. In making this claim, we challenge the dominant framing of zero-sum beliefs as inherently divisive and instead suggest that these beliefs also have a unifying function within groups. We build upon research demonstrating that shared experiences of discrimination can generate solidarity across disadvantaged groups (e.g., Cortland et al., 2017; Craig & Richeson, 2016). This is especially crucial in the context of class: fragmentation within the working class along racial, national, and gender lines (e.g., Eppard et al., 2018; Knowles et al., 2024) weakens class consciousness and unified political action (e.g., Berberoglu, 1994; Lukács, 1971/1989). Therefore, we propose that people who direct their attention toward the upper class as a common adversary may see working-class individuals as sharing their material interests and consequently increase their solidarity with them. In turn, solidarity may drive support for policy that addresses those material interests—redistributive economic policy.

Zero-sum Beliefs as a Tool to Foster Solidarity

Zero-sum beliefs—the perception that one party's gain comes at another party's expense—are a potent and pervasive way that individuals understand their social and economic environment (e.g., de Dreu et al., 2000; Johnson et al., 2022; Różycka-Tran et al., 2015; Pinkley, 1990; von Neumann & Morgenstern, 1944). These beliefs exist on a spectrum from a generalized mindset (Andrews Fearon & Götz, 2025) to highly contextualized, domain-specific attitudes that operate within particular intergroup dynamics, such as race, gender, political affiliation, religion, or immigration status (Davidai & Ongis, 2019; Esses et al., 1998; Wilkins et al., 2017). In short, zero-sum beliefs are highly versatile, manifesting across a wide range of contexts, domains, and perspectives.

Research on zero-sum beliefs has traditionally (and understandably) emphasized the corrosive effects of zero-sum thinking on intergroup relations. When people view societal gains as zero-sum, they are more likely to perceive progress for one group as a threat to another group, particularly among advantaged group members. As a result, zero-sum beliefs are consistently linked with greater prejudice, perceived intergroup competition, and resistance to equality-enhancing policies (see Davidai & Tepper, 2023 for review). For instance, individuals who perceive immigration as a zero-sum competition over scarce resources tend to be more hostile towards immigrants (Esses et al., 2002); men who believe women's progress comes at the expense of men's progress are less supportive of gender equality (Ruthig et al., 2017); Christians who believe LGBT rights threaten religious values are more likely to endorse sexual prejudice (Wilkins et al., 2022); and White Americans who believe racial minorities are gaining at their expense endorse anti-egalitarian racial attitudes (Craig & Richeson, 2014). In sum, perceiving one group's gains as another group's losses reinforces group boundaries and escalates intergroup tension.

Our theoretical proposition branches from these prevailing views by reframing zero-sum beliefs not solely as a divisive fuel to intergroup threat, competition, and perceived harm (e.g., Brown et al., 2022; Esses, 2015; Wilkins et al., 2015; see Davidai & Tepper, 2023 for review), but also as a potential catalyst for cultivating solidarity. While existing scholarship shows that zero-sum beliefs often provoke defensive responses and reinforce the perceived boundary between "us" and "them" (Esses et al., 1998; Voci, 2006), these same processes can also bolster identification with the threatened ingroup. In other words, by clarifying who is perceived as the source of advantage (i.e., the upper class) and disadvantage (i.e., the working class), zero-sum beliefs may unite members of the disadvantaged group around a sense of linked fate and solidarity.

Indeed, decades of research demonstrate that external threats increase ingroup cohesion and solidarity with one's ingroup. Classic work on social identity theory shows that threats to a group's distinctiveness or status can strengthen group-based identification and prompt group-protective responses to reaffirm the ingroup's value (e.g., Kerns, 2017; Nadler et al., 2009; Sherif et al., 1954/1988; Tajfel & Turner, 1979). External threats can also promote greater willingness to act collectively on behalf of the ingroup (Greenaway & Cruwys, 2019; Maner et al., 2012). Extending this logic to social class, we argue that when individuals perceive the upper class as gaining at the expense of the working class, the threat they experience from the upper class triggers a stronger sense of shared fate and solidarity with the working class. By underscoring the upper class as a common adversary, class-based zero-sum beliefs may heighten outgroup threat and increase solidarity among the working class. This process repositions zero-sum beliefs from a source of intergroup division into a catalyst of within-group cohesion among economically disadvantaged people.

Working-Class Fragmentation and Solidarity

Scholars have long argued that fragmentation within the working class is a key impediment to class-based solidarity (Berberoglu, 1994). Rather than coalescing around shared material interests, working-class individuals are often perceived, and perceive themselves, as members of more narrowly defined groups based on race, gender, or national origin (e.g., Cooley et al., 2024; Knowles et al., 2024, McDermott et al., 2019). This fragmentation is thought to weaken class consciousness and suppress efforts to promote economic goals that benefit the working class (Lukács, 1971/1989). Some argue that working-class fragmentation is not accidental, but strategic: by deliberately exploiting identity-based divisions, the upper class can undermine class consciousness, working-class solidarity, and collective bargaining power against their employers (e.g., Becker, 1957; Berberoglu, 1994, Roemer, 1979). For instance, in regions where racial divisions are more pronounced, unionization rates are lower and economic inequality is higher (e.g., Cohen, 2001; Reich, 1978). In sum, the working class, fractured into competing subgroups, is unable to recognize its collective material disadvantage and mobilize around it.

Research in social psychology underscores how perceived group boundaries can further hinder working-class solidarity. For instance, people often use racial cues as a heuristic for social class, associating Whiteness with higher social class and Blackness with lower social class, even when objective class indicators are held constant (Weeks et al., 2023; also see Dupree et al., 2021). These associations can promote the illusion of divergent material interests, thereby reducing the likelihood of class-based solidarity across different racial lines. Indeed, when shared disadvantage is made more salient, fragmentation is reduced (Craig & Richeson, 2016), collective action is enhanced (Cortland et al., 2017; Jun et al., 2023), and solidarity among

disadvantaged groups emerges (Chaney & Forbes, 2023). Together, these findings suggest that social identity-based divisions undermine collective class-based solidarity.

Support for Redistributive Policy

We posit that class zero-sum beliefs can help bridge these divisions by highlighting a shared source of disadvantage amongst the working class. When individuals believe the upper class benefits at the expense of the working class, this framing makes salient a common adversary and shared material fate. In turn, this perception fosters a stronger sense of working-class solidarity. We propose that solidarity acts as a key psychological mechanism through which class-based zero-sum beliefs promote support for redistributive policy.

Prior work shows that people often identify as working-class based on subjective perceptions of status, shared values, or cultural narratives (e.g., Goyder, 1975; Rubin et al., 2014; Sosnaud et al., 2014). This subjective identification can powerfully predict attitudes towards redistributive policies and political behavior independent of objective class indicators such as income, education, or occupation (e.g., Duman, 2020; Manstead, 2018). Importantly, people are more supportive of policies when they perceive their fate as linked to others in the group that stands to benefit from them (Ho et al., 2017; Leach et al., 2008). Thus, when class-based zero-sum beliefs heighten solidarity with the working class, they may also increase willingness to support policies that benefit the group.

Emerging work supports this view. Recent studies find that zero-sum beliefs about society—including zero-sum beliefs around class—are positively associated with support for redistributive policies (e.g., Chavanne, 2025; Chinoy et al., 2025). An analysis of the 2024 wave of the American National Elections Studies complements these findings (American National Elections Studies, 2025): respondents who endorsed the notion that the rich make it difficult for

everyone else to get ahead were significantly more supportive of raising the federal minimum wage, above and beyond political preferences and objective demographic characteristics (see Appendix 2 in the Supplemental Materials). Together, this evidence suggests that the extent to which one perceives class relations as zero-sum may not only generate a greater sense of solidarity but also translate into concrete policy preferences in line with the interests of the working class.

Overview of Studies

In the current work, we predict that class-based zero-sum beliefs will foster working-class solidarity, which will, in turn, inform support for redistributive policy. In Study 1, we show correlational evidence for this theoretical model, providing discriminant validity by controlling for possible alternative explanations. In Study 2, we experimentally manipulate class-based zero-sum beliefs and examine its causal impact on working-class solidarity. In Study 3, we show that the zero-sum outcome in this belief, namely who is gaining at the expense of whom, matters. In Study 4, focusing on racial divisions within the working class, we show that race-based zero-sum beliefs hinder the effect of class-based zero-sum beliefs on cross-race class solidarity. In Study 5, we provide real-world external validity for the model by conducting a longitudinal three-wave study with swing voters in the context of the 2024 Presidential Elections.

Study 1

In Study 1, we sought correlational evidence for our proposed theoretical model, ruling out potential alternative explanations. Specifically, we examined whether class-based zero-sum beliefs are uniquely related to working-class solidarity and support for redistributive policy. Participants completed established or adapted measures of class-based zero-sum beliefs, class solidarity, and support from redistributive policies drawn from prominent national debates. To

establish discriminant validity, we included a set of theoretically relevant covariates, such as general zero-sum mindset, social dominance orientation, and political ideology.

Method

Transparency

In Study 1, we preregistered a hypothesis only for the main effect of class-based zero-sum beliefs on support for redistributive policy on the Open Science Framework (OSF: https://osf.io/nzgsb/?view_only=2f77dca23a51498fa97ab9ca0aded3b7). In an additional replication study (see Study S1 in the Supplemental Material), we preregistered the full mediation model (https://osf.io/mg6xq/?view_only=1edf841db06745f485aa30cdb13bf19e). Therefore, for the sake of brevity and clarity, we report only Study 1 in the main text and refer to all preregistered analyses as confirmatory, rather than exploratory. Patterns and findings are consistent across both studies. Apart from that, there are no deviations from the preregistered analysis plan.

Participants

We recruited 604 participants through Connect by CloudResearch (Hartman et al., 2023). Of those, we excluded 14 participants who failed a preregistered attention check, resulting in a final sample of 590 eligible participants (296 men, 290 women, and 4 other gender; 401 white, 69 black, 32 Hispanic or Latino, 39 Asian, and 49 multiracial or other; mean age = 38; median income = $60,001-$80,000). Crucially, participants overwhelmingly (84.4%) identified as lower, working, and middle class, with only a small majority identifying as upper-class[2]. A sensitivity power analysis revealed that this sample size would enable us to detect a small to medium effect of $f^2 = 0.04$ (95% power, $\alpha = 0.05$, Faul et al., 2009).

[2] Participants self-identified their class affiliation: 36 lower class; 133 working-class; 121 lower middle class; 208 middle class; 88 upper middle class; 4 upper-class.

Measures

Class-based zero-sum beliefs. We measured class-based zero-sum beliefs with a three-item scale, adapted from a measure of zero-sum beliefs that focuses on the material conditions (rather than status) of the two parties (Chinoy et al., 2025). Participants indicated their agreement (1 = *Strongly Disagree* to 7 = *Strongly Agree*) with the following statements: (1) "If the upper class becomes richer, this comes at the expense of the working class;" (2) "If the upper class makes more money, then the working class makes less money;" and one reverse-scored item (3) "If the upper class does better economically, this does NOT come at the expense of the working class" (Cronbach's $\alpha = .90$).

Working-class solidarity. We measured class solidarity with a six-item scale, adapted from an existing political solidarity scale (Neufeld et al., 2019).[3] Participants indicated their agreement (1 = *Strongly Disagree* to 7 = *Strongly Agree*) with statements such as "I feel a sense of solidarity with the working class" and "It's important to challenge the power structures that disadvantage the working class" (Cronbach's $\alpha = .91$).

Linked fate. We measured linked fate with a single item, adapted from an established scale of perceived linked fate with different groups (Ho et al., 2017). Participants indicated their agreement (1 = *Strongly Disagree* to 7 = *Strongly Agree*) with the following statement: "What happens to working-class people in this country will have something do to with what happens in your life."

Social dominance orientation. We measured social dominance orientation (SDO) with the eight-item SDO_7 scale (Ho et al., 2015). Participants indicated their support (1 = *Strongly Oppose* to 7 = *Strongly Favor*) for statements such as "An ideal society requires some groups to

[3] The "cause connection" sub-scale was removed for our purposes because we did not ask about a specific cause.

be on top and others to be on the bottom" and reverse-scored statements such as "We should do what we can to equalize conditions for different groups" (Cronbach's $\alpha = .91$).

Zero-sum mindset. We measured general zero-sum mindset (ZSM) with a seven-item scale, developed to capture a broad inclination to see the world as a zero-sum game (Andrews Fearon & Götz, 2025). Participants indicated their agreement (1 = *Strongly Disagree* to 7 = *Strongly Agree*) with statements such as "Life is such that when one person gains, someone else has to lose" and reverse-scored items such as "One person's success is not another person's failure" (Cronbach's $\alpha = .89$).

Support for redistributive policy. We measured support for six neutrally framed redistributive policies (English & Kalla, 2021). Participants indicated their support (1 = *Strongly Oppose* to 7 = *Strongly Support*) for one of the following policy proposals[4]: (1) minimum wage increase; (2) student debt relief; (3) investment in affordable housing; (4) enacting a Green New Deal (with emphasis on well-paid employment for a government-run green energy sector); (5) Medicare expansion to every American; and (6) marijuana reform legislation (with emphasis on conviction erasure and rebuilding impacted communities).

Political ideology. We measured political ideology by asking participants to indicate the extent to which they subscribe to the following ideologies (1 = *Not at All* to 7 = *Very Much*; or *Not Applicable* if the ideology's meaning is not known): Conservatism, Liberalism, Democratic Socialism, Libertarianism, and Progressivism.

Results

[4] In a separate study, we show that the patterns hold when only the more clearly redistributive items are measured (minimum wage increase, student debt relief, investment in affordable housing, and enacting a Green New Deal; see Study S1 in the Supplemental Material)

First, we examined the interclass correlations of all measures (see Table 1). Notably, class-based zero-sum beliefs were strongly correlated with class solidarity (r = .42) and support for redistributive policy (r = .39).

Table 1. Interclass Pearson Correlations of measures in Study 1

	Mean (*SD*)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. Class ZSB	4.68 (1.56)	1.00										
2. Solidarity	5.92 (0.91)	.42***	1.00									
3. Support	5.27 (1.89)	.39***	.48***	1.00								
4. SDO	2.42 (1.31)	-.34***	-.64***	-.53***	1.00							
5. ZSM	3.00 (1.14)	.37***	-.01	.01	.10*	1.00						
6. Linked Fate	5.60 (1.22)	.28***	.49***	.26***	-.31***	-.01	1.00					
7. Conservatism	2.99 (1.93)	-.37***	-.31***	-.45***	.50***	-.02	-.18***	1.00				
8. Liberalism	3.74 (1.95)	.26***	.34***	.50***	-.45***	-.03	.16***	-.53***	1.00			
9. Libertarianism	3.01 (1.72)	-.22***	-.15***	-.09*	.16***	.03	-.02	.21***	.12**	1.00		
10. Progressivism	3.93 (1.99)	.32***	.39***	.54***	-.46***	-.04	.17***	-.46***	.71***	.001	1.00	
11. Democratic Socialism	3.53 (2.05)	.35***	.40***	0.54***	-.47***	-.03	.19***	-.50***	.70***	.01	0.70***	1.00
12. Race (White)		-.06	-.04	-.07	.08*	-.13**	.04	.07	.03	-.04	-.02	.03
13. Gender (Man)		-.05	-.07	-.02	.06	.04	-.04	.02	.00	.02	.01	-.03
14. Income		-.10*	-.18***	-.11**	.18***	-.07	-.16***	.08	-.06	.03	-.06	-.10*
15. Education		-.04	-.14***	-.03	.09*	.03	-.14***	.04	.01	-.01	.03	-.02
16. SES		-.16***	-.28***	-.14***	.26***	-.05	-.27***	.09*	-.06	.00	-.08	-.10*

Notes. Class ZSB = Class Zero-Sum Beliefs; Solidarity = Working-class Solidarity; Support = Support for redistributive policy; SDO = Social Dominance Orientation; ZSM = Zero-Sum Mindset; Race (White = 1; Non-White = 0); Gender (Man = 1; Non-Man = 0); SES = Socioeconomic Status. *$p < .05$; **$p < .01$; ***$p < .001$.

We next conducted a linear regression to examine whether class-based zero-sum beliefs predicted policy support, controlling for zero-sum mindset, social dominance orientation, conservatism, age, race (white = 1; non-white = 0), gender (man = 1; non-man = 0), income, education, and self-reported socio-economic status[5]. As predicted, class-based zero-sum beliefs were positively associated with support for redistributive policy (b = 0.24, SE = 0.05, 95% CI = [0.14, 0.33], $t(545) = 4.77$, $p < .001$, partial $\eta^2 = 0.20$, Cohen's $f^2 = 0.26$). We also examined whether class-based zero-sum beliefs positively predicted class solidarity, controlling for the same variables. As predicted, we found that class-based zero-sum beliefs were positively associated with class solidarity (b = 0.16, SE = 0.02, 95% CI = [0.12, 0.20], $t(545) = 7.43$, $p <$ .001; partial $\eta^2 = 0.28$, Cohen's $f^2 = 0.39$).

Finally, to test the extent to which class solidarity explains the effect of class-based zero-sum beliefs on support for redistributive policy, we conducted a 10,000-bootstrapped mediation model, controlling for the same variables as the ones listed above. As predicted, class solidarity mediated the relationship between class-based zero-sum beliefs and support for redistributive policy. In fact, the indirect effect explained 26.48% of the total effect (Total effect: b = 0.24, 95% CI = [0.13, 0.35], $p < .001$; Direct effect: b = 0.17, 95% CI = [0.06, 0.29], p = .005; Indirect effect: b = 0.06, 95% CI = [0.03, 0.10], $p < .001$). See Figure 1 for a visual representation of this mediation analysis.

[5] We control for conservatism in our models as it is the traditionally used measure of political ideology, but the same patterns emerge when controlling for all other political ideologies as well (see Appendix 3 in the Supplemental Material)

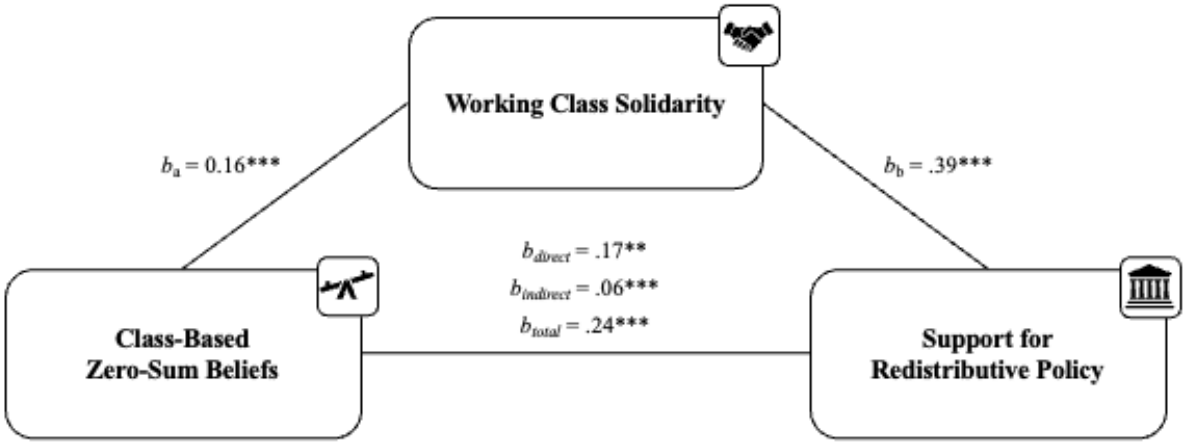

Figure 1. Visual representation of the 10,000-bootstrapped mediation model conducted in Study 1. Control variables: zero-sum mindset, social dominance orientation, conservatism, age, race, gender, income, education, and self-reported socio-economic status. ***$p < .001$; ** $p < .01$

Discussion

Study 1 provides initial evidence for our proposed model that class-based zero-sum beliefs predicted greater working-class solidarity, which in turn increases support for redistributive economic policy. Importantly, these effects are unique to class-based zero-sum beliefs, over and above having a general zero-sum mindset, social dominance orientation, political ideology, and demographic variables.

Study 2

In Study 2, we sought causal evidence of the relationship between class-based zero-sum beliefs and working-class solidarity. Specifically, we experimentally manipulated participants' class-based zero-sum beliefs and subsequently measured solidarity with the working class. We hypothesized that participants randomly assigned to the zero-sum condition would endorse greater working-class solidarity.

Method

Transparency

We preregistered Study 2 on OSF (https://osf.io/5drbu/?view_only=a558ad71bc964928aa4bd05e29b85473). All analyses were preregistered as either confirmatory or exploratory and are reported in the main text accordingly. There were no deviations from the preregistration.

Participants

We recruited 501 participants through Connect by CloudResearch (Hartman et al., 2023). Of those, 7 failed a preregistered attention check and 3 failed a preregistered bot detection test, resulting in a final sample of 491 eligible participants (234 men, 251 women, and 6 other; 341 white, 60 Black, 26 Hispanic or Latino, 21 Asian, and 43 multiracial or other; mean age = 40). Additionally, we targeted participants who are more likely to see themselves as part of the working class, so we set the recruitment criteria to those with a bachelor's degree or lower and personal annual income of $100,000 or less (final sample: 3 without a high-school degree, 167 with GED or equivalent, 83 with two-year college, 232 with four-year college, 6 other or no response; median household annual income = $60,001-$80,000)[6]. Finally, we targeted a politically representative sample, by political party (final sample: 165 Democrats, 147 Republicans, 179 Independents). Overall, a post-hoc power analysis shows that this sample size allows for 75% power to detect the observed effect size with a target alpha of .05 (d = .21; Faul et al., 2009).[7]

Materials and Procedure

[6] Indeed, 435 participants (88.6% of the eligible sample) saw themselves as at least somewhat part of the working class (14 not at all part of the working class; 42 slightly part of the working class; 107 somewhat part of the working class; 141 almost entirely part of the working class; 187 entirely part of the working class).

[7] Albeit slightly underpowered, we are confident in this study's findings because they were observed in two previous pilot studies as well (see Study S2A and Study S2B in the Supplemental Material). Indeed, a fixed effect internal meta-analysis that includes all three studies confirms these findings as well, SMD = 0.266, 95% CI = [0.15, 0.39], p < .001(see Appendix 5 in the Supplemental Material).

Participants were randomly assigned to one of two conditions: *class zero-sum condition* or *control condition*. Participants in the *class zero-sum condition* read a short article explaining how the upper class has gained wealth and influence at the expense of the working class. Importantly, the article reinforced this information by specifying ways that powerful wealthy elites use their influence through lobbying to enact anti-worker laws, slash wages, and outsource jobs. In the *control condition*, participants read a short article explaining how the modern economy is impacted by technological innovation, market dynamics, and policy decisions, emphasizing how different market forces interact in ways that make it difficult to predict economic outcomes. See Appendix 4 in the Supplemental Materials for full materials. To further bolster the manipulation, participants were asked to reflect and write about the excerpt that they were presented. Participants then responded to measures of class-based zero-sum beliefs, working-class solidarity, and support for redistributive policies[8]. Finally, participants indicated their political preferences and demographic information.

Measures

Class-based zero-sum beliefs. We measured class-based zero-sum beliefs, as a manipulation check, in the same way as Study 1 (Chinoy et al., 2025; Cronbach's $\alpha = .91$).

Working-class solidarity. We measured working-class solidarity, as the primary dependent variable, with three statements that describe one's relation to the working class (adapted from Leach et al., 2008). Specifically, participants indicated their agreement (1 = *Strongly Disagree* to 7 = *Strongly Agree*) with the following statements: (1) "I feel a sense of solidarity with the working class;" (2) "I feel a strong bond with the working class;" and (3) "I feel committed to the working class" (Cronbach's $\alpha = .93$).

[8] Additionally, as an exploratory measure, we measured the perceived responsibility of the upper class for the challenges experienced by the working class (0 = *Not at All Responsible* to 100 = *Extremely Responsible*)

Support for redistributive policy. We measured support for four redistributive policies. Specifically, participants indicated their support (1 = *Strongly Oppose* to 7 = *Strongly Support*) for: (1) raising taxes on high income earners; (2) raising the federal minimum wage to $18/hour; (3) enacting a universal basic income to all U.S. citizens; and (4) requiring businesses to pay time-and-a-half for overtime hours to employees making up to $70k/year (Cronbach's $\alpha = .78$). Policies were drawn from iSideWith.com, a polling website that tracks support for various issues in political discourse in the United States (also see Hudson et al., 2022). The issues were selected because they were clearly redistributive and have a fairly balanced distribution of support and opposition.

Results

As an initial manipulation check, we conducted a two-sample t-test comparing the two conditions' class-based zero-sum beliefs. As predicted, participants in the *class zero-sum condition* reported greater class-based zero-sum beliefs ($M = 5.52$; $SD = 1.37$) than participants in the *control condition* ($M = 5.05$; $SD = 1.54$), $t(483.47) = 3.57$, 95% $CI = [0.21, 0.73]$, $p < .001$, Cohen's $d = 0.32$.

To test our primary hypothesis, we conducted an independent-samples *t*-test to compare the two experimental conditions on class solidarity. As predicted and as shown in Figure 2, participants in the *class zero-sum condition* reported greater solidarity with the working class ($M = 5.73$; $SD = 1.17$) than participants in the *control condition* ($M = 5.49$; $SD = 1.15$), $t(488.75) = 2.31$, 95% $CI = [0.04, 0.45]$, $p = .021$, Cohen's $d = 0.21$.

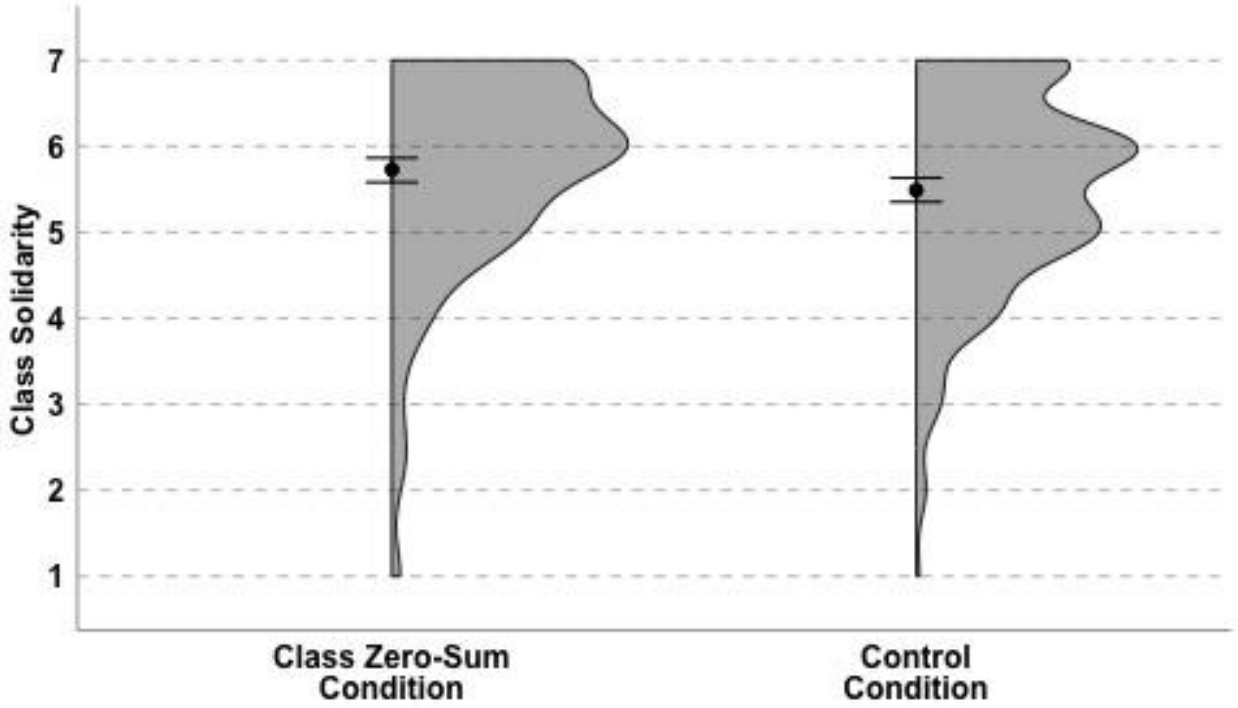

Figure 2. The effect of experimental condition on endorsement of class solidarity. Error bars represent 95% Confidence Intervals

Additionally, we sought to replicate the correlational mediation model from Study 1, with slightly different measures of class solidarity and support for redistributive policy. Controlling for experimental condition, class solidarity partially explained the relationship between class-based zero-sum beliefs and support for redistributive policy. The indirect effect explained 11.42% of the total effect (Total effect: $b = 0.62$, 95% $CI = [0.54, 0.69]$, $p < .001$; Direct effect: $b = 0.55$, 95% $CI = [0.46, 0.63]$, $p < .001$; Indirect effect: $b = 0.07$, 95% $CI = [0.03, 0.12]$, $p < .001$). As in Study 1, those who believed that the upper class is gaining at the expense of the working class were more likely to endorse solidarity with the working class ($b = 0.35$, $SE = 0.03$, 95% $CI = [0.28, 0.41]$, $t(488) = 10.67$, $p < .001$; partial $\eta^2 = 0.20$, Cohen's $f^2 = 0.25$), and in turn, expressed greater support for redistributive economic policy ($b = 0.20$, $SE = 0.05$, 95% $CI = [0.11, 0.30]$, $t(487) = 4.15$, $p < .001$; partial $\eta^2 = 0.03$, Cohen's $f^2 = 0.03$).

Discussion

Study 2 provides causal evidence for our central prediction: class-based zero-sum beliefs increase working-class solidarity. Participants led to believe that the upper class is gaining at the expense of the working class reported significantly higher levels of solidarity with the working class. Study 2 also replicated our proposed theoretical model using alternative measures of class solidarity and support for redistributive policy. Notably, however, in Studies 1 and 2 we operationalized class-based zero-sum beliefs as the upper class gaining at the expense of the working class, rather than the working class gaining at the expense of the upper class.

Study 3

We addressed this limitation directly in Study 3. Specifically, we examined whether the effects of class-based zero-sum beliefs on solidarity and redistributive policy support depend on how the zero-sum relationship is framed. We compared two framings: an *advantage-gain* frame, by which the upper class is gaining at the expense of the working class and a *disadvantage-gain* frame, by which the working class is gaining at the expense of the upper class. We hypothesized that class-based zero-sum beliefs would positively predict working-class solidarity and support for redistributive policy in an *advantage-gain* frame, but not in a *disadvantage-gain* frame.

Method

Transparency

Study 3 was preregistered on OSF (https://osf.io/udsqk?view_only=798f202652a94a2ba85dfe0eb07dd447). In this preregistration, we hypothesized that class-based zero-sum beliefs in an *advantage-gain* frame, as opposed to a *disadvantage-gain* frame, will positively predict support for redistributive policy, and that this relationship will be at least partially explained by solidarity with the working class. The control

variables in the preregistered analyses do not include conservatism, age, gender, race, education, income, and self-reported social class. However, the analyses below include all these control variables. When including only the control variable detailed in the preregistered analyses (general zero-sum mindset), the findings are consistent with those reported below (see Appendix 6 in the Supplementary Material).

Participants

We recruited 401 participants through Connect by CloudResearch (Hartman et al., 2023). Of those, 9 participants failed a preregistered attention check and were therefore excluded from the analyses, resulting in a final sample of 392 eligible participants (174 men, 212 women, and 6 other; 276 white, 48 black, 15 Hispanic or Latino, 24 Asian, and 29 multiracial or other; mean age = 40; median income = $60,001-$80,000). A sensitivity power analysis revealed that a sample of this size would enable us to detect a small to medium effect of $f^2 = 0.18$ (95% power, $\alpha = 0.05$; Faul et al., 2009).

Procedure

Participants were randomly assigned to one of two experimental conditions, manipulating whether class-based zero-sum beliefs contained an advantage-gain or disadvantaged-gain frame. In the *advantage-gain frame condition*, participants indicated their agreement with the notion that the upper class gains at the expense of the working class. Conversely, in the *disadvantage-gain frame condition*, participants indicated their agreement with the notion the working class gains at the expense of the upper class. Across conditions, we counterbalanced class-based zero-sum beliefs with measures of zero-sum mindset, class solidarity, and support for redistributive policy. Then, participants completed a measure of political ideology and party affiliation. Finally, they completed a brief demographic questionnaire.

Measures

Class-based zero-sum beliefs. We measured class-based zero-sum beliefs with the same three-item measure from Studies 1 and 2 (Cronbach's $\alpha = .94$). However, we altered the way each item was framed based on experimental condition. In the *advantage-gain frame condition*, zero-sum outcomes were framed such that the upper class is gaining at the expense of the working class (e.g., "If the upper class becomes richer, this comes at the expense of the working class"). In the *disadvantage-gain frame condition*, zero-sum outcomes were reversed such that the working class gained at the expense of the upper class (e.g., "If the working class becomes richer, this comes at the expense of the upper class").

Class solidarity. We measured class solidarity with the same measure that was used in Study 1 (Cronbach's $\alpha = .90$).

Zero-sum mindset. We measured zero-sum mindset with the same measure that was used in Study 1 (Cronbach's $\alpha = .88$).

Support for redistributive policy. We measured support for four redistributive policies, similar to the measure used in Study 1, with the exception of two policies. Namely, we kept only policies that were clearly redistributive: Minimum wage increase, student debt relief, investment in affordable housing, and enacting a Green New Deal.

Results

First, we examined our hypothesized effect of zero-sum framing condition on support for redistributive policy. To that end, we conducted a multiple linear regression with class-based zero-sum beliefs as the primary predictor, framing condition as the moderator, support for redistributive policy as the outcome, and general zero-sum mindset, conservatism, race, gender, income, education, age, and self-reported socioeconomic status as control variables. As

predicted, we found a significant interaction between framing condition and class-based zero-sum beliefs (b = -0.29, SE = 0.12, 95% CI = [-0.51, -0.06], t(346) = -2.47, p = .014, partial η^2 = 0.02, Cohen's f^2 = 0.02). Post-hoc simple slopes analyses revealed that class-based zero-sum beliefs positively predicted support for redistributive policy in the advantage-gain frame condition (b = 0.34, SE = 0.08, 95% CI = [0.18, 0.51], t(346) = 4.05, p < .001), but not in the disadvantage-gain frame condition (b = 0.06, SE = 0.09, 95% CI = [-0.12, 0.23], t(346) = 0.65, p = .516). See Figure 3A.

Next, we tested our hypothesized effect of zero-sum framing condition on class solidarity. To that end, we conducted a multiple linear regression with class-based zero-sum beliefs as the primary predictor, framing condition as the moderator, support for redistributive policy as the outcome, and the same control variables at the ones listed above. As predicted, we found a significant interaction between condition and class-based zero-sum beliefs (b = -0.18, SE = 0.06, 95% CI = [-0.29, -0.07], t(346) = -3.21, p = .001, partial η^2 = 0.03, Cohen's f^2 = 0.03). Post-hoc simple slopes analyses revealed that class-based zero-sum beliefs positively predicted class solidarity in the advantage-gain frame condition (b = 0.13, SE = 0.04, 95% CI = [0.05, 0.21], t(346) = 3.27, p = .001), but did not predict class solidarity in the disadvantage-gain frame condition (b = -0.05, SE = 0.04, 95% CI = [-0.13, 0.04], t(346) = -1.06, p = .288). See Figure 3B.

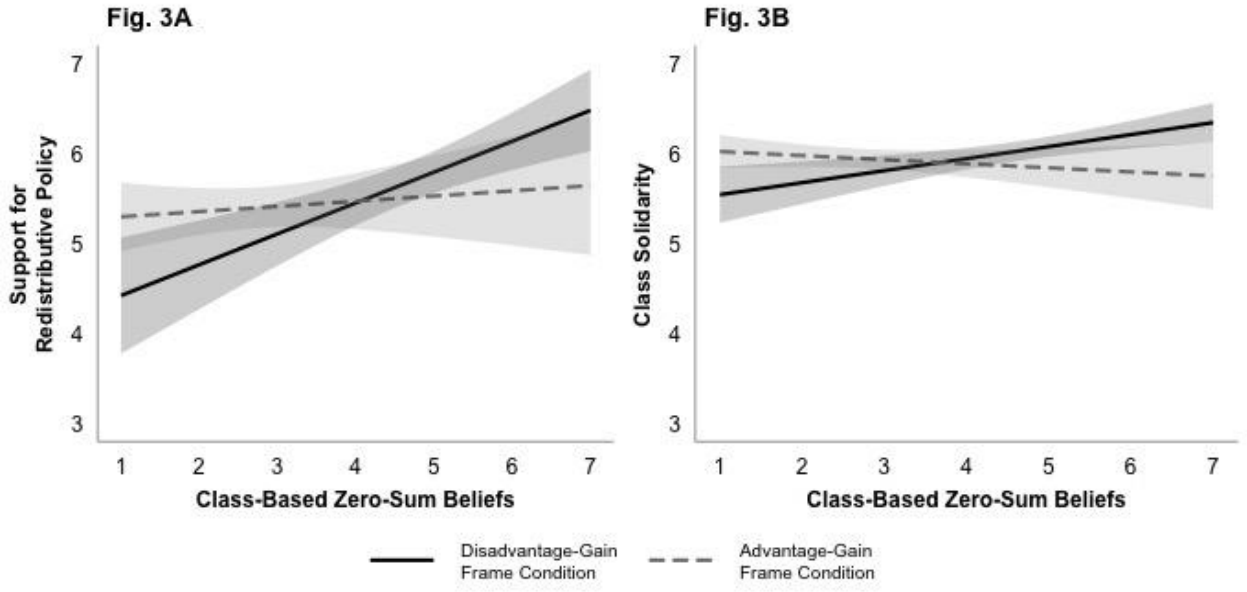

Figure 3. Interaction effects of condition and class-based zero-sum beliefs on support for redistributive policy (Fig. 3A) and class solidarity (Fig. 3B). Shaded area represents 95% Confidence Intervals.

Finally, we conducted a 10,000-bootstrapped moderated mediation model with class-based zero-sum beliefs as the predictor, class solidarity as the mediator, support for redistributive policy as the outcome, and general zero-sum mindset, conservatism, race, gender, income, education, age, self-reported socioeconomic status as control variables, and condition as the moderator in the a-path and the c-path[9]. As predicted, the conditional indirect effect of class-based zero-sum beliefs, through class solidarity, on support for redistributive policy was positive and significant for the advantage-gain frame ($\beta = 0.10$, $z = 2.62$, $SE = 0.04$, 95% $CI = [0.04, 0.19]$, $p < .001$), but not for the disadvantage-gain frame ($\beta = -0.03$, $z = -0.90$, $SE = 0.04$, 95% $CI = [-0.12, 0.04]$, $p = .334$). Results revealed a significant index of moderated mediation ($\theta = -0.14$, 95% $CI = [-0.26, -0.04]$, $p = .002$; see Hayes, 2015). This suggests that condition moderated the

[9] Moderated mediation analyses were conducted with PROCESS R (Hayes, 2022)

indirect effect of class-based zero-sum beliefs on support redistributive policy, through class solidarity.

Discussion

Study 3 demonstrates that the effects of class-based zero-sum beliefs depend on how the zero-sum relationship is framed. When participants viewed the upper class as gaining at the expense of the working class, and not inversely, class zero-sum beliefs predicted working-class solidarity and consequent support for redistributive policy. Thus, this study helps clarify an important boundary condition: zero-sum beliefs may foster solidarity and policy support particularly when they highlight one's group as a losing side in a zero-sum game. This asymmetry is reflective of the sample predominantly identifying as working-class[10]. So far, Studies 1-3 have shown the impact of class-based zero-sum beliefs on solidarity along class lines. However, the working class is not a monolith. In the U.S. in particular, class groups are deeply stratified by race and ethnicity (Center for American Progress; see Glass, 2023)[11], which may further hinder class-based solidarity (Reich, 1978). How might racial divisions impact the effect of class zero-sum beliefs on class solidarity?

Study 4

In Study 4, we investigate whether the effect of class-based zero-sum beliefs on working-class solidarity is attenuated when racial zero-sum beliefs are also salient. Importantly, we examine this with a sample of white working-class individuals, who occupy a unique social position characterized by concurrent racial advantage and class disadvantage. This intersectional position allows us to examine whether racial zero-sum beliefs—the perception that racial

[10] In the demographic portion, we asked participants about the extent to which they saw themselves as part of the working class (1 = *Not at all part of the working class*; 3 = *Somewhat part of the working class*; 5 = *Entirely part of the working class*). The mean belongingness to the working class in our sample was 3.59.
[11] The working class is comprised of 55% non-Hispanic white; 13% black, 23% Latino or Hispanic, and 9% other.

minorities gain at the expense of white Americans—can supersede the potential of class zero-sum beliefs to foster solidarity and, instead, fragment working-class solidarity along racial lines.

As in prior studies, we predicted that class zero-sum beliefs will predict greater solidarity with the working class. However, we also predicted that this effect will be attenuated among white working-class people who also endorse greater racial zero-sum beliefs. For these individuals, the perception that racial minorities gain at their expense may override the unifying effect of class zero-sum beliefs and ultimately reduce the likelihood of expressing solidarity with non-white members of the working class.

To directly assess this possibility, we measured cross-race working-class solidarity with a more race-sensitive measure of solidarity. Specifically, we adapted a measure of linked fate, defined as the belief that one group's future outcomes are tied to that (a) non-white working-class people and (b) white upper-class people (Ho et al., 2017). [12] We predicted that class zero-sum beliefs would be associated with greater linked fate with non-white working-class people and lower linked fate with the white upper class. We also predicted that these effects would be attenuated among participants who strongly endorsed racial zero-sum beliefs.

Method

Participants

We targeted white participants who were also more likely to see themselves as working-class on Connect by CloudResearch (Hartman et al., 2023). To that end, recruitment was set with a race criterion (participants must identify as white), an income criterion ($100k/year or less), and an education criterion (4-year college or less). We verified this information as part of a demographic questionnaire in the beginning of the survey. In addition, we recruited a politically

[12] Linked fate with the working class and solidarity with the working class emerged as highly correlated in Study 1 ($r = .49$, $p < .001$)

representative sample, by partisanship, roughly resembling the party identification in the population (30% Democrats, 30% Republicans, and 40% Independents; Gallup, 2025A). Overall, this left us with 200 eligible participants (193 non-Hispanic white, 7 Hispanic white; 118 women, 81 men, 1 other gender; mean age = 40; median income = $40,001-$60,000; 67 Democrats, 72 Republicans, 61 Independents). A sensitivity power analysis revealed that a sample of this size would enable us to detect a small to medium effect of $f^2 = .10$ (95% power, $\alpha = 0.05$; Faul et al., 2009).

Measures

Class-based zero-sum beliefs. We measured class-based zero-sum beliefs the same way as in Studies 1-2 (Cronbach's $\alpha = .94$).

Race-based zero-sum beliefs. We measured race-based zero-sum beliefs with three items, adapted from the class-based zero-sum beliefs scale, but with racial divisions instead of class divisions. For example, one item read "If racial minorities become richer, this comes at the expense of white people," and one reverse-scored item read "If racial minorities do better economically, this does NOT come at the expense of white people" (Cronbach's $\alpha = .91$).

Linked fate. We measured linked fate with four statements on the participants' perceived shared destiny with four different groups (16 statements total): white working-class people, white upper-class people, non-white working-class people, and non-white upper-class people. The scale, taken from Ho and colleagues (2017), included statements such as "Progress for [group] people also means progress for me" and "Issues that affect me also affect [group] people." Accordingly, we computed four mean scores: Linked fate with white working-class people (Cronbach's $\alpha = .85$), linked fate with white upper-class people (Cronbach's $\alpha = .89$), linked fate with non-white working-class people (Cronbach's $\alpha = .88$), and linked fate with non-

white upper-class people (Cronbach's $\alpha = .88$). In this context, perceived linked fate with non-white working-class people is an operationalization of *cross-race working-class solidarity*, whereas perceived linked fate with white upper-class people is an operationalization of *cross-class white solidarity*.

Results

First, we examined the main effects of zero-sum beliefs on linked fate. Specifically, we tested whether class-based zero-sum beliefs were positively associated with linked fate with non-white working-class people and negatively associated with linked fate with white upper-class people. Controlling for conservatism, regression analyses revealed that class-based zero-sum beliefs positively predicted linked fate with non-white working-class people ($b = 0.12$, $SE = 0.06$, 95% $CI = [0.01, 0.24]$, $t(190) = 2.09$, $p = .038$, partial $\eta^2 = 0.06$, Cohen's $f^2 = 0.06$), but negatively predicted perceived linked fate with white upper-class people ($b = -0.40$, $SE = 0.06$, 95% $CI = [-0.52, -0.27]$, $t(190) = -6.17$, $p < .001$, partial $\eta^2 = 0.24$, Cohen's $f^2 = 0.31$). As shown in Figure 4, this suggests that class-based zero-sum beliefs predict cross-race class solidarity.[13]

We next examined whether race-based zero-sum beliefs positively predicted linked fate with white upper-class people and negatively predicted linked fate with non-white working-class people. Regression results revealed that, controlling for conservatism, race-based zero-sum beliefs negatively predicted linked fate with non-white working-class people ($b = -0.26$, $SE = 0.05$, 95% $CI = [-0.37, -0.16]$, $t(190) = -4.85$, $p < .001$, partial $\eta^2 = 0.14$, Cohen's $f^2 = 0.17$), but

[13] Consistent with our theorizing, class-based zero-sum beliefs also positively predicted linked fate with white working-class people ($b = 0.12$, $SE = 0.05$, 95% $CI = [0.02, 0.21]$, $t(190) = 2.50$, $p = .013$, partial $\eta^2 = 0.03$, Cohen's $f^2 = 0.03$), and negatively predicted linked fate with non-white upper-class people ($b = -0.26$, $SE = 0.07$, 95% $CI = [-0.40, -0.12]$, $t(190) = -3.62$, $p < .001$, partial $\eta^2 = 0.07$, Cohen's $f^2 = 0.07$), controlling for conservatism.

positively predicted linked fate with white upper-class people (b = 0.26, SE = 0.06, 95% CI = [0.13, 0.38], $t(190) = 4.00$, $p < .001$, partial $\eta^2 = 0.12$, Cohen's $f^2 = 0.14$).[14]

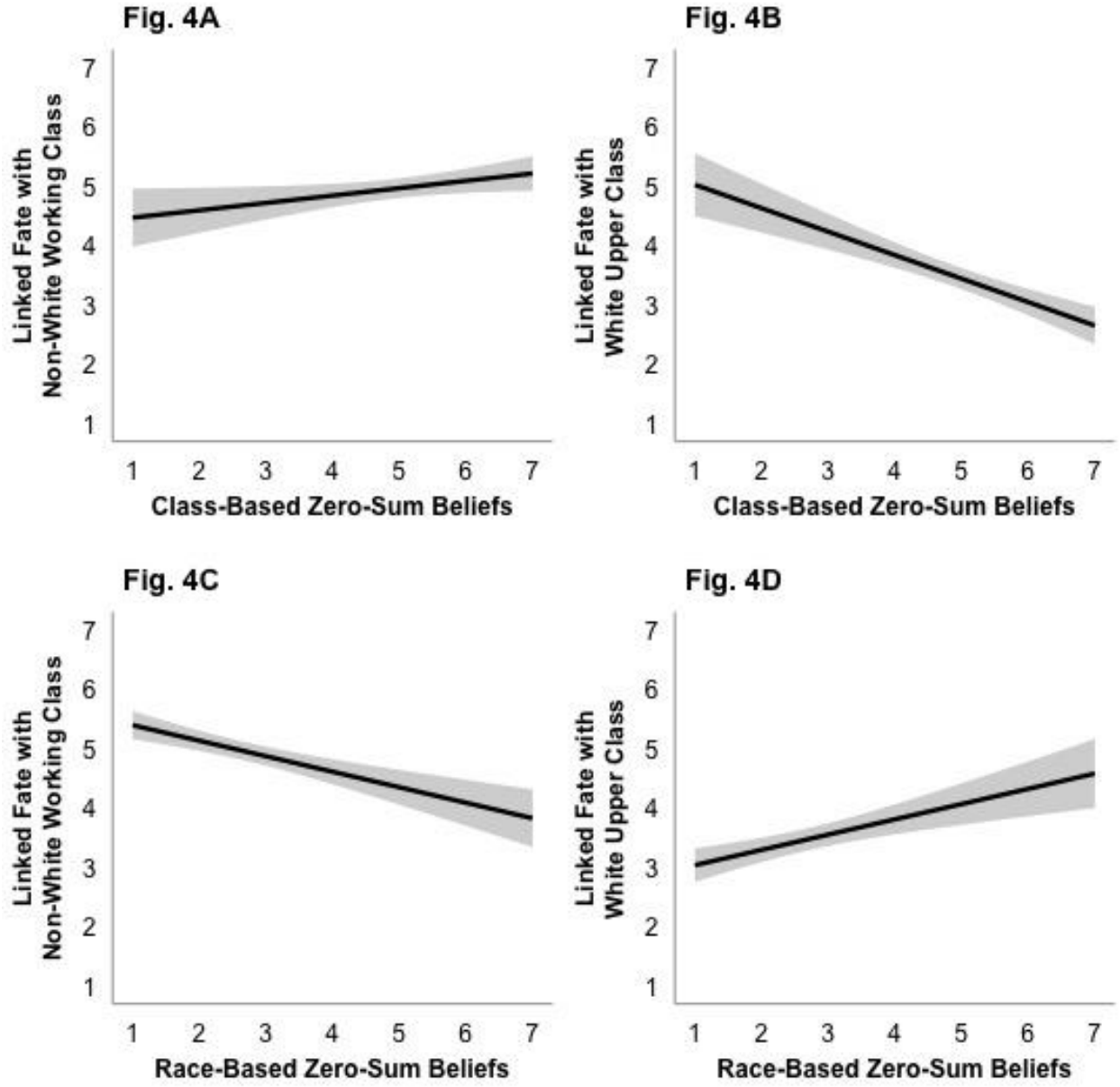

Figure 4. Effects of class-based zero-sum beliefs on perceived linked fate with non-white working-class people (Fig. 4A) and white upper-class people (Fig. 4B), as well as effects of race-based zero-sum beliefs on perceived linked fate with non-white working-class people (Fig. 4C)

[14] Race-based zero-sum beliefs were not associated with linked fate with non-white upper-class people (b = -0.01, SE = 0.07, 95% CI = [-0.15, 0.13], $t(190) = -0.17$, $p = .866$, partial $\eta^2 = 0.00$, Cohen's $f^2 = 0.00$), as well as linked fate with white working-class people (b = -0.02, SE = 0.05, 95% CI = [-0.11, 0.07], $t(190) = 0.48$, $p = .630$, partial $\eta^2 = 0.00$, Cohen's $f^2 = 0.00$), controlling for conservatism.

and white upper-class people (Fig. 4D). All models control for conservatism. Shaded areas represent 95% confidence intervals

We next examined whether race-based zero-sum beliefs moderated the relationship between class zero-sum beliefs and perceived linked fate with the non-white working-class people, controlling for conservatism. Results revealed a significant interaction between race- and class-based zero-sum beliefs (b = -0.07, SE = 0.03, 95% CI = [-0.132, -0.002], t(188) = -2.04, p = .043, partial η^2 = 0.02, Cohen's f^2 = 0.02)[15]. Post-hoc simple slope analyses, using Johnson-Neyman intervals, revealed that class-based zero-sum beliefs positively predicted linked fate with non-white working-class people when racial zero-sum beliefs were low (-1SD = 1.11; b = 0.22, SE = 0.07, 95% CI = [0.09, 0.36], t(188) = 3.21, p = .002), but not when they were high (+1SD = 4.22; b = 0.02, SE = 0.08, 95% CI = [-0.14, 0.18], t(188) = 0.19, p = .846). As shown in Figure 5, this moderation effect suggests that race-based zero-sum beliefs attenuate the effect of class-based zero-sum beliefs on cross-race class solidarity. This interaction effect did not emerge for any of the other linked fate outcome variables (see Table 2).

Table 2. Study 4 interaction effects of race- and class-based zero-sum beliefs on perceived linked fate

Linked fate group	b	t	95% CI	p	η^2
White working-class	-0.01	-0.26	[-0.06, 0.05]	.795	0.00
Non-white working-class	-0.07	-2.04	[-0.132, -0.002]	.042	0.02
White upper-class	-0.01	-0.28	[-0.08, 0.06]	.777	0.00
Non-white upper-class	-0.02	-0.50	[-0.10, 0.06]	.616	0.00

Notes. Non-standardized beta coefficients denote interaction effect of class-based zero-sum beliefs and race-based zero-sum beliefs on perceived linked fate with each of the listed groups, in separate models; all models include conservatism as a control variable; df = 188

[15] The interaction effect holds when conservatism is not inserted as a control variable to the model (b = -0.08, SE = 0.03, 95% CI = [-0.14, -0.02], t(196) = -2.43, p = .016, partial η^2 = 0.02, Cohen's f^2 = 0.02)

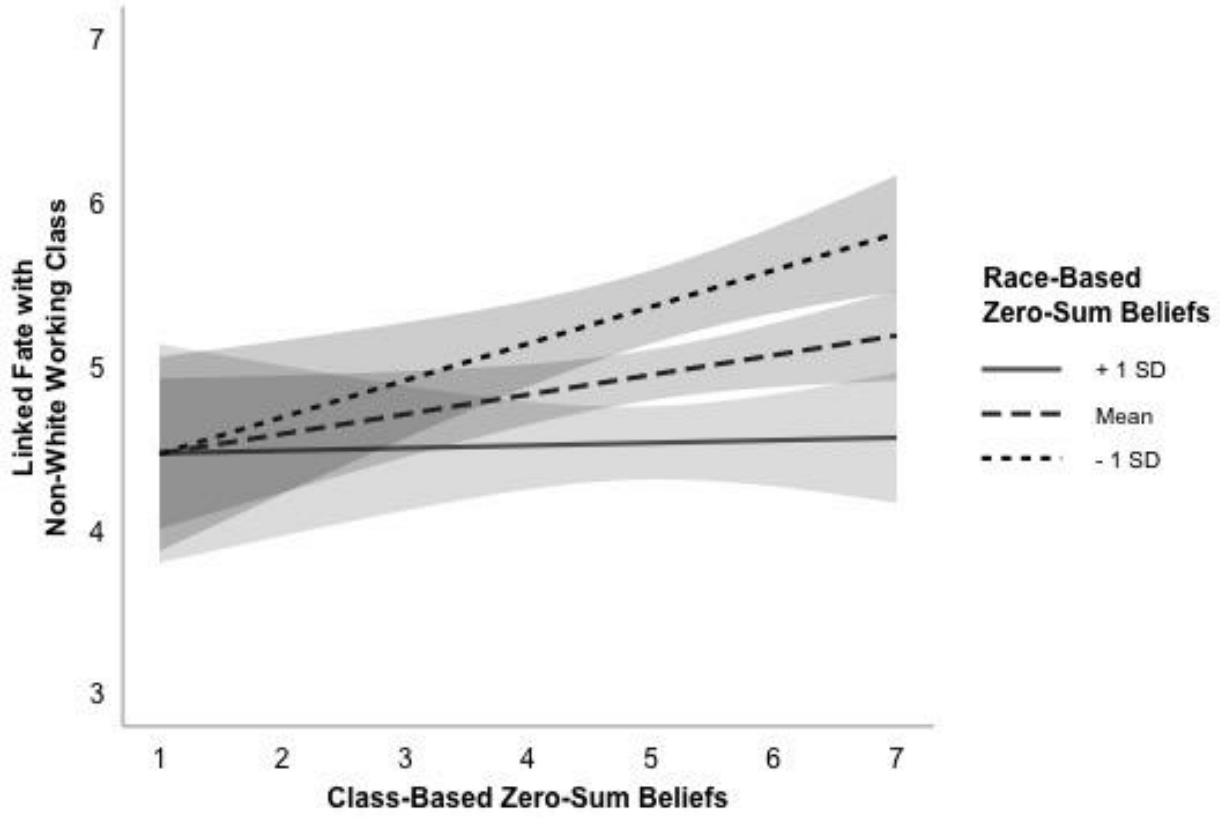

Figure 5. Visual representation of Study 4's interaction effect of race-based zero-sum beliefs and class-based zero-sum beliefs on perceived linked fate with non-white working-class people. Shaded areas represent 95% confidence intervals

Discussion

Study 4 provides evidence for the power of different group-based zero-sum beliefs in impacting solidarity. Specifically, by employing two dimensions of identity for working-class white people, we isolated the differential effects of class- and race-based zero-sum beliefs on the perceived shared destiny with other members of one's class and racial group, across racial and class divisions, accordingly. White working-class people who believed that racial minorities are gaining at their expense saw their fates as positively linked with that of upper-class white people and negatively linked with that of non-white working-class people. Those who believed that the upper class is gaining at their expense saw their fates as positively linked with that of non-white working-class people and negatively linked with that of upper-class white people. When the

zero-sum outcome is threatening to one's group, they tend to see that group members' destiny as linked with their own.

With one exception. Working-class white people who were threatened by the gains of both racial and class outgroups did not report a higher sense of linked fate with non-white working-class people. This moderation effect provides evidence for the notion that what hinders working-class solidarity is fragmentation along racial lines, hindering the ability to see otherwise shared material interests.

Study 5

In Study 5, we investigated whether class-based zero-sum beliefs extend to materially impactful political behavior. By following swing voters in a longitudinal study in the context of the 2024 U.S. Presidential Election, we assess whether class-based zero-sum beliefs, measured in September, predict support for redistributive ballot measures and voting choices in November. We further explore if these beliefs explain shifts from voters' intention in August to behavior in November. We also examine whether perceiving a candidate's alignment with the interest of the working class explains the relationship between class-based zero-sum beliefs and voting behavior. Study 5 therefore offers a high-stakes behavioral test of our theoretical model, evaluating whether class zero-sum beliefs drive political action.

Method

Transparency

This study was preregistered in two waves: The first preregistration was submitted before Time 0 (August 26th, 2024; https://osf.io/8ct4m/?view_only=c63308d0214e431280a6b1730b606dd4) and the second preregistration was submitted before Time 1 (September 24th, 2024;

https://osf.io/v9c5y/?view_only=e9eb60ee80d040b48951427db41cd7ea). As mentioned in the Time 1 preregistration, we changed course after Time 0 and, instead of having four time points (with an additional survey in October), we revised our sampling plan to entail only three time points. That said, our primary hypotheses have not changed between the two preregistrations. Ahead of Time 0, we preregistered a detailed recruitment, enrollment, and exclusion strategy, and we did not deviate from that plan (see *Participants* section below). In addition to the analysis plan that was preregistered ahead of Time 0 (which we report fully in the main text), we added another analysis ahead of Time 1 (which we report fully in the main text as well). In that preregistration, we planned to measure support for only one redistributive policy (increasing the minimum wage) in Time 2, but we ended up adding three more policy proposals (Green New Deal, affordable housing, and student debt relief). We report all deviations in the Preregistration Deviation Table (see Appendix 8 in the Supplemental Material).

Participants

We recruited swing voters through Prolific Academic for a multi-wave study conducted during the 2024 U.S. Presidential election cycle. The initial recruitment phase (Time 0) occurred in August 26–27, 2024, resulting in a sample of 4700 respondents who completed our initial recruitment screener in which they documented their voting history and voting intentions for the upcoming election. As preregistered, we recruited participants until we identified roughly 1000 swing voters, classified in accordance with the criteria of Data For Progress (2024A)—a prominent U.S. polling organization and think tank.[16] This resulted in an initial pool of 1,037 swing voters willing to participate in our multi-wave online study. Of those, 899 participants (86.7% retention) completed the Time 1 survey on September 24th, 2024. Following the election,

[16] The Data For Progress classification of swing voters requires meeting three of four criteria. As preregistered, and for fluency of data collection, we relaxed the classification to two of four criteria

769 participants (85.5% retention from Time 1; 74.2% retention from Time 0) completed the Time 2 survey on November 6th, 2024 conducted immediately after the election.

The final sample (N = 769) consisted of the participants who completed all three waves of the study. To confirm that attrition was not driven by partisanship, ideology, or demographic characteristics, we compared the final sample to the initial pool of swing voters (N = 1,037). We observed no notable differences suggesting that attrition occurred at random rather than systematically based on ideology or demographic characteristics (see Appendix 7 in the Supplemental Material). Overall, we captured a demographically diverse sub-section of the American swing voter electorate: 477 white (62.0%), 87 Black (11.3%), 33 Hispanic or Latino (4.3%), 60 Asian (7.8%), 112 multiracial or other (14.6%); 405 men (52.7%), 332 women (43.2%), 32 other gender or no response (4.1%); mean age = 39; median income = $60,001-$80,000. Additionally, our final sample remained relatively politically diverse, with a vast majority of independents as expected in a sample of swing voters: 143 Democrats (18.6%), 133 Republicans (17.3%), 476 Independents (61.9%), and 17 did not report a political affiliation (2.2%).

Procedure

Recruitment and classification (Time 0). In August 26–27, 2024, participants were introduced to the multi-wave survey and pay schedule before providing baseline measurements of their recent electoral history (2020 voting behavior), current voting intentions (i.e., 2024 presidential and congressional voting intentions), 2024 presidential candidate evaluations, party identification, political ideology, and demographic information. Following criteria from Data For Progress, we classified participants as swing voters if they met two of the four following criteria: (1) Inconsistency between 2020 vote recall, 2024 two-way ballot, and 2024 six-way ballot were;

(2) Inconsistency in vote choices between the 2024 Presidential two-way ballot, the 2024 Presidential six-way ballot, and generic congressional ballot were not all consistent; (3) Similar favorability ratings for Harris and Trump[17]; and (4) Self-reported consideration of voting for more than one candidate in the 2024 Presidential election.

Pre-election Assessment (Time 1). In September 2024, the midst of the election cycle, participants completed the following Time 1 measures: (1) voting intentions; (2) open-ended reasoning for those intentions; (3) the perceived impact of their presidential choice on the working class; (4) vote for a hypothetical redistributive ballot measure; (5) class-based zero-sum beliefs; (6) race-based zero-sum beliefs; (7) immigration zero-sum beliefs; (8) general zero-sum mindset; (9) class solidarity; and (10) the extent to which different groups pose a threat to the working class. All measures and interclass correlations are reported in Appendix 9 in the Supplemental Material.

Post-election Assessment (Time 2). In November 2024, one day after the elections, participants completed the following Time 2 measures: (1) voting behavior; (2) open-ended reasoning for their vote; (3) perceived impact of the two major party candidates on the working class; (4) perceived impact of the two major party candidates on the upper class; (5) vote for a hypothetical redistributive ballot measure; (6) class-based zero-sum beliefs; (7) trust in institutions; (8) class solidarity; and (9) the extent to which different groups pose a threat to the working class. All measures and interclass correlations are reported in Appendix 9 in the Supplemental Material.

Time 0 Measures

[17] Favorability ratings were indicated on 4-point scales. They were categorized as similar if both Trump and Harris were unfavorable (1 or 2) or if both Trump and Harris were favorable (3 or 4).

Presidential voting behavior in 2020. We asked participants who they voted for in the 2020 Presidential Election: Joe Biden (Democratic Party), Donald Trump (Republican Party), Jo Jorgensen (Libertarian Party), Howie Hawkins (Green Party), or no vote (wording taken from Data For Progress, 2024A).

Presidential voting consideration in 2024. We asked participants who they were considering voting for President in 2024, selecting all that apply of the following: Donald Trump, Kamala Harris, third party, or not voting (Data For Progress, 2024A).

Presidential voting intention in 2024. We asked participants who would they vote for if the elections were held tomorrow and the following were the candidates: Donald Trump (Republican Party), Kamala Harris (Democratic Party), Robert F. Kennedy (Independent), Cornel West (Independent), Chase Oliver (Libertarian Party), Jill Stein (Green Party), not sure, or no vote. Additionally, we asked the same question, but only with the two major party candidates (Trump and Harris), not sure, and no vote (Data For Progress, 2024A).

Congressional voting intention in 2024. We asked participants if they would vote for the Democratic party candidate, the Republican Party candidate, or if they were unsure who to vote for in their congressional district race (Data For Progress, 2024A).

Favorability ratings of major party candidates. We asked participants to indicate how favorable their attitudes were (1 = *Very Unfavorable* to 4 = *Very Favorable*) toward Donald Trump and Kamala Harris, with the option of indicating that they haven't heard enough about them to say (Data For Progress, 2024A).

Party identification. We asked participants which party they identify with: Democratic Party, Republican Party, or Independent / Third Party. If they indicated Independent / Third Party, we asked which of the two major parties they leaned towards (Data For Progress, 2024A).

Political ideology. As asked participants to indicate the extent to which they subscribed to the following ideologies (with the option to indicate *Not Applicable* if they do not know): Conservatism, Liberalism, Democratic Socialism, Libertarianism, and Progressivism.

Time 1 Measures

Presidential voting intention in 2024. We measured voting intentions the same way as the Time 0 measure (with all candidates listed as options).

Class-based zero-sum beliefs. We measured class-based zero-sum beliefs the same way they were measured in Studies 1, 2, and 4 (Cronbach's $\alpha = .91$).

General zero-sum mindset. We measured general zero-sum mindset the same it was measured in Studies 1 and 3 (Cronbach's $\alpha = .87$).

Time 2 Measures

Voting behavior. We asked participants who they voted for in the 2024 Presidential election (with all candidates listed as options).

Perceived impact on the American working class. We asked participants to estimate the impact of both major party candidates' presidency (as well as their own selection, if they voted for someone else) on the American working class (1 = *Extremely Negative* to 7 = *Extremely Positive*).

Support for hypothetical redistributive ballot measures. We asked participants to indicate their vote for four hypothetical ballot measures (*Yes*; *No*; *I would not have voted*). The ballot measures were: (1) "enact a Green New Deal;" (2) "raise the federal minimum wage to $15/hour;" (3) "forgive $50,000 in student debt, per borrower;" and (4) "enact legislation that guarantees housing as a right to all Americans." We coded "Yes" as 1; "No" as 0, and "I would not vote" as *NA*. Then, we calculated a mean score of the four items (Cronbach's $\alpha = .78$).

Class solidarity. We measured class solidarity in the same way as in Study 2 (Cronbach's $\alpha = .93$).

Voting swings

To establish the nature of our sample as consisting of swing voters, we report shifts from voting intentions to voting behavior (see Figure 6). At Time 0, 200 participants indicated their intention to vote for Harris, 191 participants indicated their intention to vote for Trump, 136 participants indicated that they were unsure who they would vote for, and 242 indicated that they would vote a third-party candidate or not vote at all. At Time 2, 239 participants reported voting for Harris, 228 participants reported voting for Trump, 205 reported that they did not vote, and 97 reported voting for a third-party candidate.

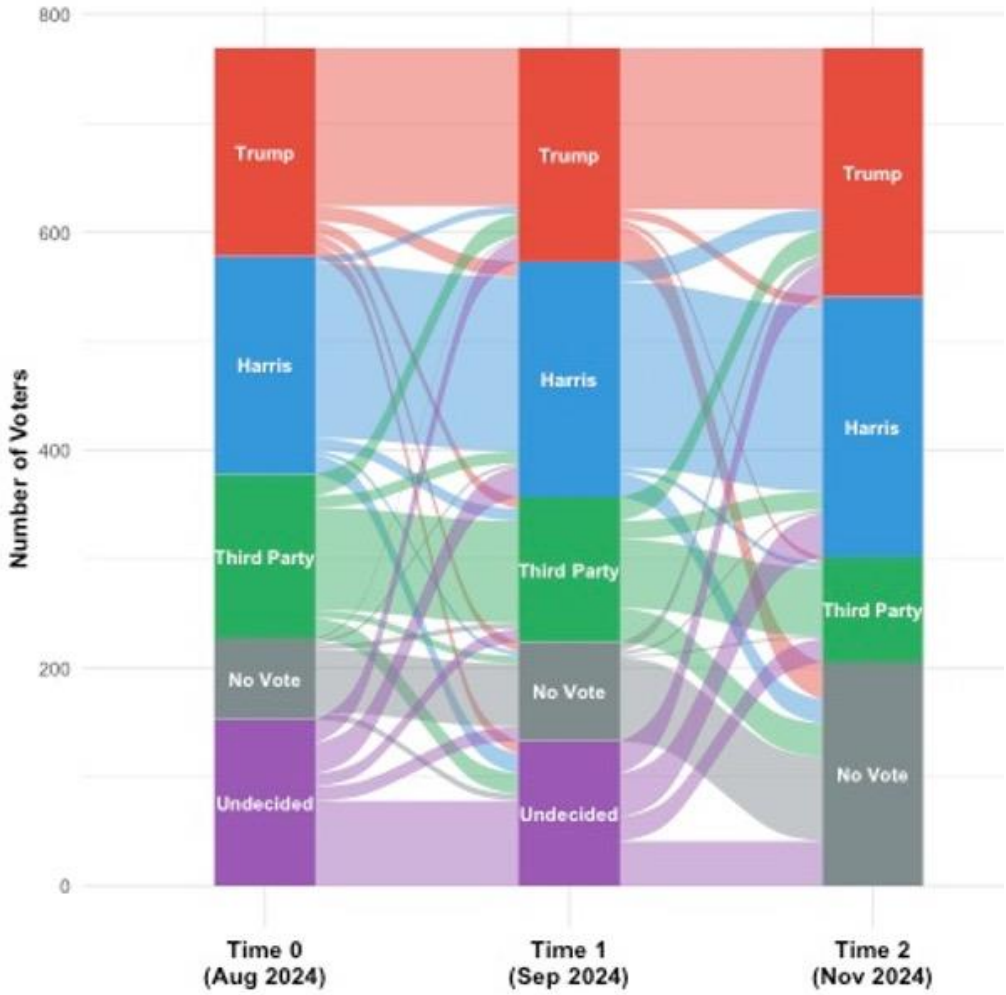

Figure 6. Alluvial plot of shifts from voting intention in August 2024 to voting intention in September 2024 to voting behavior in November 2024.

Results

A Test our theoretical model in the context of the elections

First, we next examined the effect of class-based zero-sum beliefs (measured at Time 1) on voting for redistributive ballot measures (Time 2). To that end, we conducted a multiple linear regression with voting for redistributive ballot measures as the outcome variable, class-based zero-sum beliefs as the primary predictor, and zero-sum mindset, conservatism, party affiliation, race, age, gender, income, and education as control variables. As predicted, class-based zero-sum beliefs at Time 1 positively predicted voting for hypothetical redistributive ballot measures at

Time 2, $b = 0.08$, $SE = 0.01$, 95% $CI = [0.06, 0.10]$, $t(652) = 8.39$, $p < .001$, partial $\eta^2 = 0.23$, Cohen's $f^2 = 0.29$.

Next, we examined whether working-class solidarity (measured at Time 2) partially explained the relationship between class zero-sum beliefs and policy support. To that end, we conducted a 10,000-bootstrapped time-lagged structural equation model with Time 2 voting for redistributive ballot measures as the outcome variable, Time 1 class-based zero-sum beliefs as the predictor, and Time 2 working-class solidarity as the mediator. We included the same model control variables as described above. As predicted, class solidarity at Time 2 mediated the relationship between class-based zero-sum beliefs at Time 1 and support for redistributive ballot measures at Time 2. The indirect effect explained 14.10% of the total effect (Total effect: $b = 0.08$, $SE = 0.01$, 95% $CI = [0.06, 0.10]$, $p < .001$; Direct effect: $b = 0.07$, $SE = 0.01$, 95% $CI = [0.05, 0.09]$, $p < .001$; Indirect effect: $b = 0.01$, $SE = 0.003$, 95% $CI = [0.005, 0.02]$, $p = .002$). See Figure 7 for a visual representation of this analysis.

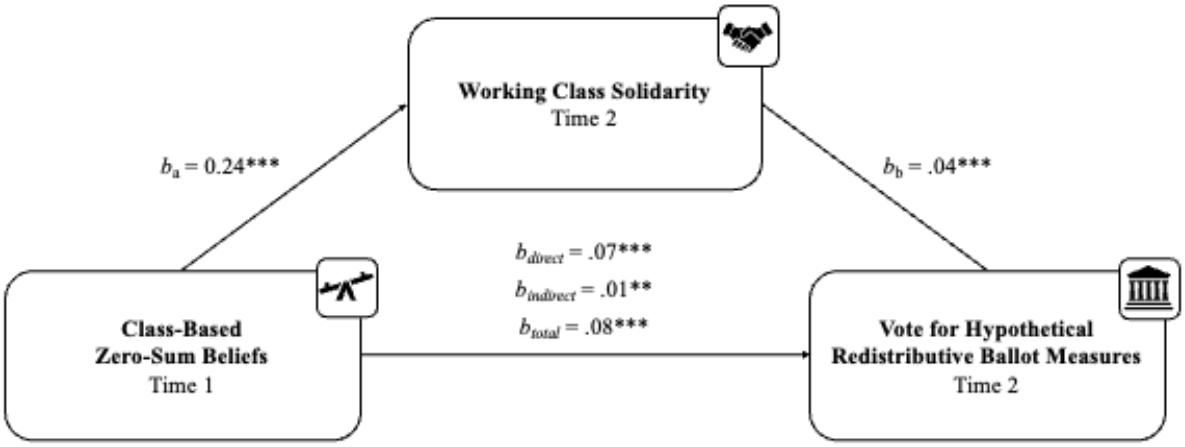

Figure 7. Visual representation of the 10,000-bootstrapped time-lagged structural equation model conducted in Study 5. Control variables: zero-sum mindset, conservatism, party affiliation, race, age, gender, income, and education. ***$p < .001$; ** $p < .01$

The role of class-based zero-sum beliefs in presidential voting

We next investigated whether class-based zero-sum beliefs explained shifts in voting for the two major presidential candidates: Kamala Harris and Donald Trump. To do so, we conducted separate linear regression models predicting vote choice at Time 2 (post-election), controlling for voting intentions at Time 0 (pre-election)[18].

We first tested whether class-based zero-sum beliefs explained a swing to vote for Harris. We included a Harris vote at Time 2 as the outcome variable (1 = voted for Harris; 0 = did not vote for Harris), class-based zero-sum beliefs at Time 1 as the primary predictor, and voting intention for Harris at Time 0 as the control variable (1 = intent to vote Harris; 0 = no intent to vote Harris). Results revealed that class-based zero-sum beliefs significantly increased the likelihood of switching to vote for Harris, $b = 0.02$, $SE = 0.01$, 95% $CI = [0.01, 0.04]$, $t(745) = 2.75$, $p = .006$, partial $\eta^2 = 0.03$, Cohen's $f^2 = 0.03$. We then examined shifts in voting Trump using the same analytic strategy. We found that class-based zero-sum beliefs were negatively associated with voting for Trump at Time 2, controlling for voting support for Trump at Time 0, $b = -0.04$, $SE = 0.01$, 95% $CI = [-0.06, -0.02]$, $t(745) = -4.09$, $p < .001$, partial $\eta^2 = 0.06$, Cohen's $f^2 = 0.06$. Together, these results suggest that class-based zero-sum beliefs influenced swing voters' willingness to shift their vote during the 2024 Presidential Election, shifting support away from Trump and toward Harris. Potentially, to the extent that voters perceived the upper class as gaining at the expense of the working class, they were more likely to revise their vote in favor of a candidate they perceived as representing working-class interests.

[18] We also conducted linear models predicting voting for Harris and Trump at Time 2 by class-based zero-sum beliefs at Time 1, controlling for zero-sum mindset, conservatism, income, education, age, race, and gender (Harris vote: $b = 0.04$, $SE = 0.04$, 95% $CI = [0.01, 0.07]$, $t(670) = 3.09$, $p = .002$, partial $\eta^2 = 0.02$, Cohen's $f^2 = 0.02$; Trump vote: $b = -0.06$, $SE = 0.01$, 95% $CI = [-0.09, -0.04]$, $t(670) = -4.71$, $p < .001$, partial $\eta^2 = 0.05$, Cohen's $f^2 = 0.05$; see Appendix 9 in the Supplemental Material for full regression tables)

To further explore this mechanism, we examined whether participants' perceptions of how each candidate would impact the working class mediated the relationship between zero-sum beliefs and their vote choice[19]. We reasoned that individuals who believed the upper class is gaining at the expense of the working class would vote for the candidate they believed will serve in the best interest of the working class. First, we examined whether the perceived impact of a Harris presidency on the working class mediated the relationship between class-based zero-sum beliefs (Time 1) and voting for Harris (Time 2). Using a 10,000-bootstrapped mediation model, we found a significant indirect effect, explaining 38.18% of the total effect (Total effect: b = 0.04, 95% CI = [0.02, 0.06], $p < .001$; Direct effect: b = 0.03, 95% CI = [0.01, 0.04], p = .005; Indirect effect: b = 0.02, 95% CI = [0.004, 0.03], p = .007). Class-based zero-sum beliefs was positively associated with the predicted impact of a Harris presidency on the working class (b = 0.10, SE = 0.04, 95% CI = [0.03, 0.18], $t(746) = 2.72$, p = .007, $\eta^2 = 0.01$, Cohen's $f^2 = 0.01$), which in turn, positively predicted voting for Harris (b = 0.15, SE = 0.01, 95% CI = [0.13, 0.16], $t(746) = 16.66$, $p < .001$, partial $\eta^2 = 0.27$, Cohen's $f^2 = 0.37$).

Second, we performed the same 10,000 bootstrapped mediation model but instead examined the mediating role of the perceived impact of a Trump presidency on the working class, as it related to voting for Trump. Remarkably, the indirect effect explained 92.89% of the total effect (Total effect: b = -0.06, 95% CI = [-0.08, -0.04], $p < .001$; Direct effect: b = -0.005, 95% CI = [-0.02, 0.01], p = .635; Indirect effect: b = -0.06, 95% CI = [-0.07, -0.05], $p < .001$). Class-based zero-sum beliefs negatively predicted the perceived impact of a Trump presidency on the working class (b = -0.43, SE = 0.04, 95% CI = [-0.51, -0.35], $t(746) = -10.86$, $p < .001$, η^2

[19] Patterns from both mediation models persist when controlling for general zero-sum mindset, conservatism, income, education, age, race, and gender (see Appendix 9 in the Supplemental Material).

= 0.14, Cohen's f^2 = 0.16), which in turn, was positively associated with voting for Trump (b = 0.14, SE = 0.01, 95% CI = [0.12, 0.15], $t(745) = 16.57$, $p < .001$, partial $\eta^2 = 0.27$, Cohen's f^2 = 0.37). That is, those who believed that the upper class is gaining at the expense of the working class were less likely to vote for Trump, and this was meaningfully explained by their belief that a Trump presidency will have a negative impact on the working class.

Discussion

Building on prior studies, Study 5 illustrates that class-based zero-sum beliefs not only predict attitudinal support for redistribution but also shape real-world political behavior. In a three-wave longitudinal study conducted during the 2024 Presidential Election, participants who believed the upper class gains at the expense of the working class were more likely to support redistributive ballot measures and shift their vote in support of Kamala Harris. Crucially, these effects were mediated by perceptions of candidates' impact on working-class interests. Class-based zero-sum beliefs were associated with the perception that Harris would benefit—and Trump would harm—the working class, which in turn explained voting preferences.

General Discussion

Across five studies, we demonstrated that class-based zero-sum beliefs can foster solidarity which, in turn, translates into greater support for redistributive economic policies. In Study 1, we showed that class-based zero-sum beliefs uniquely predicted working-class solidarity, above and beyond general zero-sum beliefs, social dominance orientation, political ideology, and demographic information. In Study 2, we experimentally manipulated class zero-sum beliefs, confirming the directional effect of class zero-sum beliefs on solidarity. In Study 3, we manipulated the framing of zero-sum beliefs and showed that the effect emerged only when the upper class were gaining at the expense of the working class, as opposed to the working class

gaining at the expense of the upper class. This highlights that zero-sum beliefs may foster solidarity, and subsequent policy support, particularly when individuals identify with a disadvantaged group in a known zero-sum relationship.

In Study 4, we sought to understand whether this belief could help overcome racial divisions. Among white working-class participants, class-based zero-sum beliefs predicted cross-race working-class solidarity, unless they also endorsed racial zero-sum beliefs (i.e., minorities gaining at the expense of white Americans). For participants with high racial zero-sum beliefs, solidarity was directed along racial lines rather than along class lines. Finally, in Study 5 we documented that class-based zero-sum beliefs predicted swing voters' support for redistributive ballot measures and shifts in voting towards Kamala Harris, and away from Donald Trump, in the 2024 Presidential Election. Together, the present findings reveal that class zero-sum beliefs––typically construed as divisive for intergroup relationships—can under certain conditions foster solidarity and political mobilization in response to existential economic threat.

This research builds on, and advances, the current theoretical understanding of zero-sum beliefs. Consistent with existing theory, this research shows that group-based zero-sum beliefs strongly predict favorable ingroup attitudes in the face of an outgroup gaining at its expense (e.g., Wilkins et al., 2017). Indeed, prior work emphasizes how zero-sum beliefs reinforces competition and status protection (e.g., Kuchynka et al., 2018). However, most of this work was conducted from the perspective of the advantaged group (see review Davidai & Tepper, 2023). Therefore, favorable ingroup attitudes, when studied from the perspective of high-status, advantaged groups, are consistent with support for inequality (Ruthig et al., 2017) and opposition to equality (Brown et al., 2022). Our work reframes this logic: from the perspective of class-related disadvantaged group, zero-sum beliefs can illuminate a shared adversary and, thereby,

activate collective solidarity with the working class. In this case, favorable ingroup attitudes are associated with redistributive economic policy—policy that attenuates, rather than perpetuates, economic inequality.

Building on existing work on the impact of shared disadvantage on coalition building and allyship (Cortland et al., 2017), we show that group-based zero-sum beliefs can not only foster solidarity with the ingroup, but it can also create coalitions between socially divided sub-groups within that group. Specifically, we provide evidence that the zero-sum beliefs that people conjure up between different groups, along different lines, can make salient the boundaries of the group that is being threatened by a zero-sum outcome. This, in turn, can bridge divides between subgroups toward a sense of solidarity with the broader group that is seen as losing from a zero-sum relationship it is in. In a way, this research shows the potential of zero-sum beliefs to bridge divides, rather than exacerbate them.

In the context of class, the sense of solidarity is especially pertinent. As broad literatures in sociology and political psychology suggest, a *divided* working class is a *weakened* working class that does not fight for its material interests (Berberoglu, 1994). Indeed, the fragmentation of the working class along race, gender, and nationality prevents it from coming together in solidarity (Caluori et al., 2024; Cooley et al., 2024; Knowles et al., 2024). We provide one theoretical explanation for this fragmentation: a belief in race- as opposed to class-based zero-sum beliefs. In Study 4, we provide initial evidence for the proposition that social divisions within the working class moderates the link between the notion that the upper class gains at the expense of the working class and consequent cross-race working-class solidarity. And yet, we show that over and above this moderation, class-based zero-sum beliefs still explain solidarity, suggesting that believing that the upper class gains at the expense of the working class can

overcome these divisions. The literature will greatly benefit from additional research on the moderating role of racial zero-sum beliefs in cross-race class solidarity.

In a time of existentially threatening economic hardship experienced by many Americans (Consumer Financial Protection Bureau, 2024; Dayforce, 2024; U.S. Census Bureau, 2024), theoretically driven insights that drive working-class solidarity are vital. Borrowing from the established power of zero-sum beliefs, we show here that they can generate an impactful sense of solidarity with the working class in pursuit of support for redistributive policy. With this zero-sum belief, focused on the notion that upper-class gains come at the expense of the working class, the majority of Americans may realize that their material interests are broadly aligned, especially in comparison to the material interests of corporate executives and powerful elites. This sense of solidarity, driven by class-based zero-sum beliefs, may ultimately foster political change that will attenuate the economic threat faced by lower-, working-, and middle-class Americans.

Indeed, by following swing voters in the leadup to the presidential election, we were able to explain meaningful shifts in from voting intentions to voting behavior. As political analysts routinely point out (Data For Progress, 2024B), explaining swing votes in a presidential election is the holy grail of political polling. Therefore, by showing that class-based zero-sum beliefs explained shifts in presidential voting, we provide valuable evidence for the power of class-focused messaging and policy in political behavior. As many political pundits have posited in the aftermath of the 2024 elections (Loewer & Abbott, 2024), focusing on people's material needs is not just good policy, but also good politics. We add to that analysis by showing that especially useful is painting a clear upper-class culprit for working-class economic struggles.

Class-based zero-sum beliefs may play an important role in work contexts as well. Specifically, reframing this relationship from social class dynamics to workplace dynamics can generate worker-focused organizational behavior. Some work suggests that feelings of shared disadvantage in the workplace is associated with cross-race allyship among employees (Jun et al., 2023). This may help bridge racial divides that hinder unionization efforts (Reich, 1978). Can zero-sum beliefs facilitate in these efforts? Drawing from the current research, if zero-sum beliefs are framed as corporate executives (rather than upper-class) gaining at the expense of workers (rather than the working class), this may lead to greater solidarity among workers and ensuing unionization. By endorsing workplace zero-sum beliefs, workers may overcome divisions and come together to form a union that will advance their material interests. Future research will benefit greatly from examining this question in a workplace context.

We experimentally manipulated class-based zero-sum beliefs to show its effect on solidarity. We were able to do so despite the relative stability of zero-sum beliefs, somewhat like an ideological worldview, generally difficult to manipulate in an experimental design (see Davidai & Tepper for a review). That said, it is possible that the manipulation also affected variables other than class-based zero-sum beliefs (e.g., general zero-sum beliefs, working-class disadvantage). Therefore, our ability to make a strong causal claim remains limited. Further, exploratory findings from Study 2 and Study 5 suggest that a key component of the relationship between class-based zero-sum beliefs and class solidarity is a belief that the upper class is responsible for hardship experienced by the working class (see Appendix 10 in the Supplemental Material). Future research will greatly benefit by experimentally delineating the unique roles of (1) class zero-sum beliefs over general zero-sum beliefs; (2) class zero-sum beliefs over concern for the working class that is unrelated to the upper class; and (3) perceived upper-class

culpability over class zero-sum beliefs. Identifying the upstream causes of solidarity, as they relate to class-based zero-sum beliefs, will add much-needed nuance to the relationship between zero-sum beliefs and solidarity.

Given the existential nature of this economic threat to the working class, some might argue that voting, as a behavioral response, is not enough. This is especially true in the context of the 2024 Presidential Election—in which both major party candidates did not clearly align themselves with the interests of the working class. Therefore, future research will greatly benefit from exploring the impact of class-based zero-sum beliefs on political behavior that extends beyond the ballot. With growing social unrest and distrust in institutions (Gallup, 2025B), potential behaviors may be more radical in nature, such as mass civil disobedience, general strikes, and even political violence. These social actions, given the current political and economic climate, will be best understood through the lens of class and economic inequality.

Conclusion

In conclusion, our findings demonstrate that class-based zero-sum beliefs can serve as a pathway to greater working-class solidarity and support for redistributive policy. By directing attention to a common economic adversary, these beliefs have the potential to unify the working class around common economic interests, even across entrenched racial divisions. In doing so, this work advances theory on zero-sum thinking by showing that, under certain conditions, beliefs typically seen as divisive can also serve as a foundation for collective identity among disadvantaged groups in the face of structural inequality. More broadly, these findings underscore how people can psychologically respond to existential economic threat not with resignation or system justification, but by cultivating solidarity in pursuit of systemic change.

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