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Abstract

Frames shape public opinion on policy issues, with implications for policy adoption and agendasetting. What impact do common issue frames for racial equity in education have on voters' support for racially equitable education policy? Across survey experiments with two independent representative polls of California voters, framing effects were moderated by voters' prior policy preferences. Among respondents concerned with tax policy, a frame emphasizing the economic benefits of equity elicited higher priority for racial equity in education. Among respondents concerned with social justice, an "equal opportunity" frame elicited higher priority ratings. However, exploratory analyses showed frames only mattered when respondents held mixed policy preferences. Among respondents who (a) valued both tax policy and social justice issues, or who (b) valued neither, both frames were equally impactful.

Key words: framing effects; racial equity; survey experiment; public opinion; policy preferences; opportunity gap; "achievement gap"

Framing Effects and the Public's Attitudes toward Racial Equity in Education Policy

Public opinion on racial equity¹ in education influences policymaking (Brooks & Manza, 2006; Burstein, 2003), as well as individuals' activism outside of electoral politics (Benford & Snow, 2000). An important source of learning for the public in shaping their attitudes on policy issues is the frames they encounter in political discourse, media, and elsewhere (Chong & Druckman, 2007; Lakoff, 2004; Lecheler & de Vreese, 2019). Issue frames help people come to a shared understanding of a situation, develop a vocabulary for discussing issues, and agree on a course of action (Benford & Snow, 2000; Chong & Druckman, 2007; Kinder & Herzog, 1993). What impact do common issue frames for racial equity in education have on voters' support for racially equitable education policy? Despite the vast literature on framing effects and public opinion generally (e.g., Chong & Druckman, 2007; Lecheler & de Vreese, 2019), surprisingly little experimental work exists on the effects and moderators of common issue frames for racial equity in education.

In two independent representative polls of California voters, I estimate the causal effects of issue frames on the extent to which respondents prioritize racial equity in education. Specifically, I compare two frames commonly used in education discourse: the economic frame, which emphasizes the role of schools in fueling economic prosperity; and the equal opportunity frame, which emphasizes the role of schools as the "great equalizer." I find that framing effects are moderated by respondents' policy preferences. Among respondents concerned with tax policy, a frame emphasizing the economic value of educational equity increases the priority

¹I use the term "racial equity" to describe the elimination of the oppressive social relations that contribute to the construction of racialized groups (e.g., Darby & Rury, 2018; Young, 1990). I use the terms "racial inequality" or "racial disparities" descriptively, to refer to between-group differences in the distribution of educational inputs or outcomes that result from oppressive social relations. In my usage, efforts to end racial inequality in educational outcomes are part of a broader effort to advance racial equity in education and beyond. An assumption I make is that in the absence of present oppressive social relations and the redressing of past oppression, between-race outcome disparities would disappear or stochastically fluctuate in directionality with negligible magnitude.

ratings respondents give to equity (and this result replicates across the two independent samples). Among respondents concerned with social justice, the equal opportunity frame elicited higher priority ratings. However, these contrasting frames only matter when respondents have mixed policy preferences. Among respondents who (a) value both tax policy and social justice issues, or who (b) value neither, the two frames are equally impactful (tested in second poll only).

I begin this article by providing an overview of framing theory along with the "social construction of target populations" framework. After outlining how common frames may impact people's attitudes toward racial equity in education policy, I describe two survey experiments in which I test hypotheses motivated by the literature on framing effects. Finally, I consider implications of the results.

Background

Framing Theory

Framing is a concept studied across the social sciences, with different origins depending on the discipline (Lecheler & de Vreese, 2019). There is no single consensus definition of framing, and the term is applied to describe various distinct but related phenomenon (Benford & Snow, 2000; Chong & Druckman, 2007; Lecheler & de Vreese, 2019; Levin et al., 1998; Nelson et al., 1997; Scheufele & Tewksbury, 2007). In the present study, I draw from framing theory as applied in research on the effects of policy discourse on public opinion (Chong & Druckman, 2007). In this tradition, any policy issue can be viewed from a variety of perspectives, and can be understood as having implications for numerous, sometimes conflicting, values (Chong & Druckman, 2007; Lecheler & de Vreese, 2019). Frames help people make sense of complex issues by simplifying them, emphasizing certain cause-and-effect relationships (Benford & Snow, 2000), or revealing implications for particular values (Chong & Druckman, 2007). Frames can be adopted unconsciously (Lakoff, 2004), but are also deployed strategically by political

actors to influence public opinion (Benford & Snow, 2000). People come to form their opinions by selectively accepting or rejecting frames they encounter. Through the process of public debate in which alternative or competing frames are applied, shared understandings congeal around policy issues and the consequences of policies (Chong & Druckman, 2007).

A "framing effect" refers to the impact that processing the information in a frame has on individuals (Lecheler & de Vreese, 2019). In one famous example, in a poll of self-identified egalitarians, 85% of respondents supported the right of a hate group to hold a political rally when they were prompted to consider the importance of free speech, whereas only 45% supported the right to rally when they were prompted to consider the risk of violence (Sniderman & Theriault, 2004). Politicians attempt to influence voters' opinions on policies by framing issues in ways that draw attention to certain potential effects or to important values.

For a given issue frame to affect one's attitudes, the considerations highlighted by the frame must be available for retrieval from one's memory. Building on the earlier example, if a "free speech" framing is to increase someone's level of support for the right of a hate group to rally, the person exposed to the frame must understand the concept of free speech. Framing effects can operate by making existing beliefs or values more accessible in memory, or by making the beliefs or values seem more applicable (Chong & Druckman, 2007).

Framing effects can be moderated by a variety of factors, some related to the context in which the frame is applied, and others related to the individual encountering the frame (Lecheler & de Vreese, 2019). Important individual-level moderators include prior beliefs and values. When someone's beliefs or values align with the messaging in the frame, the frame can reinforce and intensify the person's attitudes (Chong & Druckman, 2007; Haider-Markel & Joslyn, 2001). On the other hand, when someone's beliefs or values conflict with the message in the frame, the

frame can backfire by calling counterarguments to the person's mind, thus intensifying their opinion in the opposite direction (Chong & Druckman, 2013; Druckman, 2001).

Framing and the Social Construction of Target Populations

Frames for policy issues will often reference or construct target populations (Ingram & Schneider, 2015). According to the "social construction of target populations" framework, social constructions are stereotypes about groups created by a wide range of sources, including politics, culture, media, history, and socialization (Schneider & Ingram, 1993). Groups are socially constructed as either deserving or undeserving of policy benefits or burdens, and elite and public support for a policy will depend in part on whether benefits (or burdens) are distributed to deserving (or undeserving) groups (Bell, 2019; Ingram & Schneider, 2015; Schneider & Ingram, 1993). Policies and policymakers contribute to the social construction of groups, but policymakers also enter an ongoing policy discourse within which pre-existing social constructions are at play. The pre-existing constructions influence public figures' choices of how to frame policies, and the way in which those frames are received by the public (Ingram & Schneider, 2015).

In a country like the United States, policies aiming to address racial inequalities – in education or otherwise – are inescapably introduced within the context of pre-existing racist social constructions (Darby & Rury, 2018). Attempts to redress racial injustices through policies must therefore compete with racist social constructions of minoritized groups as being undeserving of policy benefits (Schneider & Ingram, 1994).

Evidence consistent with the influence of racist social constructions on the public's policy preferences can be seen in opinion research demonstrating that the US public is less interested in education policies benefitting racially minoritized students than in policies benefiting low-income students. In a nationally representative YouGov survey experiment,

Valant and Newark (2016) estimated that 64% of American adults believe it is "high priority or essential" to close the "test score gap" between poor and wealthy students, whereas only 36% and 31% gave those ratings to closing Black-White or Hispanic-White test score disparities, respectively. Respondents also expressed more support for specific policy proposals (such as school choice vouchers, free summer school, and monetary incentives for teachers) when aimed at narrowing test score inequalities by wealth versus by ethnoracial groups. In higher education, Bell (2019) found that respondents in a Qualtrics sample weighted to match US demographics were more likely to support income-based versus race-based affirmative action (63% versus 41% supporting). This support gap remained, and even widened, when target populations were described as "high-achieving," with 71% supporting affirmative action for "high achieving racial/ethnic minoritics." In both studies, response patterns were generally driven by White respondents, with Black respondents showing no significant difference in their support for addressing educational inequality by class versus between Black and White students (Bell, 2019; Valant & Newark, 2016).

Frames and Moderators for Attitudes toward Racial Equity in Education

The above research shows White Americans are less supportive of efforts to address racial inequality than class inequality in education. To what extent might these attitudes be influenced by the issue frames applied to racial equity in education? Two common frames for educational inequity are (a) social justice frames, and (b) economic frames (Delgado, 2013; Eng, 2016; FrameWorks Institute, 2009). Some social justice frames in education make a moral appeal by drawing on the American tradition of schools as the "great equalizer." Such frames may call attention to the importance of providing equal opportunity in education to enable a "level playing field" in other arenas of life (Davey, 2009; Eng, 2016). In contrast, the economic

frame calls attention to the economic implications of academic inequalities. For example, a McKinsey and Company report characterized "achievement gaps" as imposing the "economic equivalent of a permanent national recession" (McKinsey & Company, 2009, p. 5).

Voters will vary in the kinds of justifications they find compelling for why they should care about racial equity as a policy issue. Research in other policy areas (e.g., Brewer, 2001; Shen & Edwards, 2005) suggests the effects of a given frame for racial equity in education will depend on whether the rationale in the frame aligns with the values held by the person exposed to the frame. With this theory in mind, I hypothesize that framing racial equity as an economic issue will be more effective at raising priority levels for racial equity in education among people who prioritize economic concerns. In contrast, I hypothesize that framing it as a social justice issue will be more impactful among people with an orientation toward social justice or egalitarianism.

Research on Framing Effects for Racial Equity in Education

Although issue frames have been extensively studied in general (Chong & Druckman, 2007; Lecheler & de Vreese, 2019) and in relation to racial inequality (Gilliam, 2006) and education policy issues (Houston, 2021; Reckhow et al., 2015), there is less experimental work specifically on framing effects for the public's attitudes toward educational inequity by race. I was unable to find any experimental evidence on the effects of social justice or economic frames on people's attitudes toward racial equity in education. The most closely related experimental work I am aware of is a set of studies my co-authors and I conducted testing the effects of "attribute frames" – or the labels used to describe a phenomenon (Hardisty et al., 2010; Levin et al., 1998) – for racial equity in education. Specifically, we tested the effect of a the "racial achievement gap" phrase. Labels or attribute frames can affect people's attitudes by calling attention to positive or negative aspects of the referent (Levin et al., 1998), or by calling to mind

specific communication frames with which the labels are associated (Lakoff, 2004). The term "achievement gap" is criticized for being associated with a deficit frame (e.g., Carey, 2014; Hillard, 2003; Ladson-Billings, 2006; Royal, 2012). For this reason, my co-authors and I hypothesized that people would assign a lower priority rating to "closing the racial achievement gap" compared with the conceptually synonymous "ending racial inequality in educational outcomes." In a survey experiment with a national (but not nationally representative) sample of teachers (n=1.549), we found evidence supporting this hypothesis (Quinn et al., 2019). Furthermore, the negative effect of "achievement gap" language was driven by White teachers (overall ES = -0.11 SD; ES for White teachers = -0.17 SD; Quinn et al, 2019), and was moderated by teachers' implicit racial stereotypes, with larger negative effects among teachers holding stronger anti-Black/pro-White stereotypes (Quinn & Desruisseaux, 2022). We replicated the main effect of the gap frame on priority ratings in a second sample of non-teachers drawn from Amazon MTurk (ES = -0.26 SD), where we also found that the achievement gap frame increased respondents' explicit racial stereotypes (ES = 0.18 SD; Quinn & Desruisseaux, 2022). The effect of this simple change of attribute frame suggests that more robust issue frames may also have effects.

Summary and Research Questions

Theory and empirical work demonstrate issue frames affect people's attitudes and policy preferences (e.g., Chong & Druckman, 2007; Lecheler & de Vreese, 2019). One element of a frame that impacts people's support for, or opposition to, a policy is the way in which the policy's target population is socially constructed (Ingram & Schneider, 2015). Is the population stereotyped as deserving or undeserving of policy benefits or burdens? Public opinion research shows Americans are more likely to support education policies that benefit "low-income students" and less likely to support policies benefiting racially minoritized students (Bell, 2019;

Valant & Newark, 2016). Issue frames may play a role in influencing the extent to which the public supports policies specifically aimed at reducing racial inequalities in education. Common frames related to the economic benefits of reducing racial disparities in education, or to the social justice angle of the issue, tap into different sets of concerns that members of the public hold. As such, the effect of each frame on voters' priority levels may differ depending on the values held by the person encountering the frame.

In this article, I present results from survey experiments with two independent representative samples of California voters. I ask the following research questions: *Does framing racial inequality in educational outcomes as an economic, versus social justice, issue affect the priority people place on the issue? Is this effect moderated by the importance people place on economic or social justice issues in public policy? Do effects differ depending on the combination of policy preferences held by respondents?*

Methods

Sample and Procedures

I address my RQs using data from two independent samples of California voters from the annual PACE/Rossier polls on education policy issues. To administer the survey, Policy Analysis for California Education (PACE) and USC Rossier collaborated with Tulchin Research, who used an online panel provider to obtain the data. Tulchin provided sampling weights (based on respondent political party, age, race and ethnicity, gender, and geography) to improve the representativeness of the sample.

I included a framing experiment in the poll fielded in January of 2018, and conducted exploratory moderation analyses using those data (n=2367 of 2500 poll respondents). I then sought to replicate those findings (and conduct additional analyses) by including a similar

framing experiment along with an additional moderator in the poll fielded in January 2020 (n=1888 of 2000 respondents).

Framing Experiment: Economic vs. Equal Opportunity Frames

Each survey year (2018 and 2020), respondents were randomly assigned to read one of two issue frames prior to answering the issue-prioritization outcome item (described below). Before viewing the frame, participants responded to the survey items used as moderators (described below). Both experimental framing conditions began with following text adapted from Valant & Newark (2016): "In the United States today, white and Asian students score higher on average on math and reading tests than do black and Latino students." The economic frame was followed by the text, "Economists have argued that investing in closing these achievement gaps in the US will help improve our country's economic health and global competitiveness." The equal opportunity (EO) frame was instead followed by the text, "As a result, black and Latino students often have lower educational attainment and fewer job opportunities compared to white and Asian students." (Exact wording differed slightly in 2018; see Appendix A)

Measures

Issue Prioritization (Outcome). After reading their randomly assigned frame, respondents in both conditions were asked, "*In thinking about the many important issues facing our country, how would you rate closing the racial achievement gap in education? Do you think that it is a top priority, a high priority, a medium priority, a low priority, or that it is not a priority?"* (Exact wording differed slightly in 2018; see Appendix A). Responses were converted to a 5-point scale for analysis, with 5 = "top priority" and 1 = "not a priority." Respondents were also given the option of "don't know." Rates for the "don't know" response did not differ across conditions either year, at approximately 5%. These respondents were

dropped from the analytic sample (see Appendix B for comparisons of analytic sample vs. dropped observations).

As is, this item enables comparisons to past research and employs language likely to be familiar to respondents; recall, however, that the "achievement gap" term itself elicits lower priority levels than the term "inequality in educational outcomes" and may activate deficit mindsets (Quinn et al., 2019; Quinn & Desruisseaux, 2022). I return to this issue in the Discussion section.

Tax Importance (**Moderator**). In 2018 and 2020, respondents were shown a list of policy issues (with order randomized) and were asked to rate how important they felt each was, on a scale of one (not at all important) to ten (very important). In both years, the issue "the amount we pay in taxes" was included. I use this item as a moderator to test whether the effect of the economic framing differs depending on how much importance the respondent placed on taxes. Less than 1% of respondents chose the "don't know" response for this item in each survey year; these respondents were dropped from the analytic sample (rates of "don't know" did not differ across conditions either year).

Social Justice Importance Index (Moderator). In 2020, six policy issues were included for respondents to give an importance rating to. In addition to "the amount we pay in taxes," respondents rated: "the economy and jobs," "the quality of our public schools," "housing and homelessness," "criminal justice reform," and "racism and racial justice." An exploratory factor analysis showed one factor with an eigenvalue above one (2.22). The factor loaded on the following items (in descending order, all loadings above .60): criminal justice reform; racism and racial justice; housing and homelessness; quality of our public schools. I create a "social justice importance" index by taking the mean rating of these four items (Cronbach's $\alpha = .78$).

Analytic plan

I fit separate linear regression models predicting the priority rating outcome (while applying sample weights) for each survey sample. My main models of interest are models that interact the relevant moderator variable(s) with the binary indicator variable for framing condition. I test whether the framing effect depends on how important taxes are to respondents by fitting the following model (separately for the 2018 and 2020 samples):

(1)
$$Y_i = \beta_0 + \beta_1 E con_i + \beta_2 TaxImp_i + \beta_3 (E con_i \times TaxImp_i) + \epsilon_i,$$

where Y_i is respondent *i*'s response on the "issue prioritization" outcome, *Econ* is an indicator variable for random assignment to the economic (vs. EO) frame, and *TaxImp* is respondent's value on the "tax importance" item (standardized to mean=0 and sd=1).

I test whether the framing effect varies by respondents' "social justice orientation" by fitting the following model to data from the 2020 survey:

(2) $Y_i = \beta_0 + \beta_1 E con_i + \beta_2 SocJust_i + \beta_3 (E con_i \times SocJust_i) + \epsilon_i$, where *SocJust_i* is respondent *i*'s value on the social justice index (standardized to mean=0, sd=1).

Models 1 and 2 enable me to test each moderator separately, without regard to the other moderator. Additionally, I am interested in how the frames may differentially impact the attitudes of participants with different combinations of policy preferences. I therefore fit a model to the 2020 survey data that includes all possible pairwise interactions among the framing condition and moderators (with moderators standardized to mean=0, sd=1):

(3)
$$Y_{i} = \beta_{0} + \beta_{1}Econ_{i} + \beta_{2}SocJust_{i} + \beta_{3}TaxImp_{i} + \beta_{4}(Econ_{i} \times SocJust_{i}) + \beta_{5}(Econ_{i} \times TaxImp_{i}) + \beta_{6}(SocJust_{i} \times TaxImp_{i}) + \epsilon_{i}$$

Model 3 tests whether framing effects differ not only by each moderator separately (controlling for the other terms), but whether effects differ for respondents with different "value profiles." I conduct post-hoc tests comparing predicted outcome values across framing conditions for

prototypical respondents with different combinations of scores on the *SocJust* and *TaxImp* moderator variables.

In all models, I cluster standard errors by county. As robustness checks, I fit ordered logistic regression models and OLS models adjusting for measurement error in the moderators. All results replicate those presented here (see Appendix C).

Results

Descriptive Statistics and Main Effects

In Table 1, I present weighted descriptive statistics for the 2018 and 2020 samples, along with balance checks across framing conditions. For both survey samples, baseline differences across conditions were small in magnitude and never statistically significant. In neither year was the set of predictor variables jointly significant when predicting a binary indicator variable for framing condition.

<Table 1>

From Table 1, we immediately see there was no significant main effect of framing condition on issue-prioritization ratings in either survey year (see the "Issue-priority (outcome)" rows). Respondents in the 2018 sample gave relatively high average support for equity, with a weighted overall mean of 3.74 (sd=1.09) on the 5-point scale, and 63% of the (weighted) sample responding with "high priority" or above. There was a dip in average priority ratings in the 2020 sample compared to 2018, with a weighted mean of 3.34 (sd=1.16) on the 5-point scale, and only 49% of the (weighted) sample responding with "high priority" or above.

In both years, the distribution of respondents' importance scores for "the amount we pay in taxes" was negatively skewed with relatively high overall weighted means (8.32 and 8.57 out of 10 in 2018 and 2020, respectively). Social justice index scores in 2020 were also relatively high (and negatively skewed), with a mean of 8.13 on the 10-point importance scale. In both years, the majority of the weighted sample identified as White and the modal political party affiliation was Democrat (results broken down by respondent race and political party show no consistent pattern and rarely show significant main effects for subgroups; see Appendix D).

Moderation of Framing Effects

In Figure 1, I present the moderation results from the 2018 survey sample (n=2367). Although there was no significant main effect of framing condition (see Appendix C for fitted models), I find – as hypothesized – the framing effect differs depending on the importance respondents place on taxes. The y-axis for Figure 1 is the 5-point issue-priority rating outcome, and the x-axis is respondents' rating of how important they feel "the amount we pay in taxes" is as a policy issue (shown in the original scale where 10 = "very important" and 1 = "not at all important"; x-axis begins at the 10^{th} percentile of the sample distribution, tax importance=5). The two intersecting fitted lines depict the significant disordinal interaction (p=.003) between the frame and tax-importance. Here, we can see that the "equal opportunity" frame is effective at increasing the issue-priority ratings among respondents who place relatively low importance on taxes. When tax importance = 5, the effect size is .16 sd in favor of the EO frame (p=.01). At higher levels of tax-importance, the directionality reverses: respondents assigned to the economic frame give higher issue priority ratings, on average, compared with respondents assigned to the economic frame (p=.04).

<Figure 1>

Because the tax-item moderation effect found in the 2018 survey was exploratory (no significant interactions were found with the other policy items from that year), I sought to replicate the result by including the items in a new independent sample of voters in 2020. In

Table 2, I present the results from a taxonomy of fitted models using the 2020 data (n=1888); I present selected models graphically in Figures 2 and 3.

<Table 2>

As seen in Table 2, and like the 2018 poll, there is no significant main effect of the economic frame on priority ratings. Column 1 shows this estimate controlling for the main effect of tax importance, column 2 shows the estimate controlling for the main effect of the social justice index, and column 3 shows the main effect controlling for both.

On the left-hand panel of Figure 2, I depict the estimates from column 4 of Table 2, which replicates the significant interaction between framing condition and tax-importance seen in the 2018 sample (again for interpretability, I keep tax-importance in the original unstandardized 10-point scale for the figure). Again, the EO frame increases priority ratings among respondents who placed lower importance on taxes, but not among respondents who place high importance on taxes. The effect size is .21 sd (p=.002) in favor of the EO frame when tax importance = 6 (10th percentile of the sample); predicted priority levels are not significantly different across conditions when tax importance = 10 (90th percentile).

<Figure 2>

In the right-hand panel of Figure 2, I show the significant disordinal interaction between framing condition and the social justice priority index (column 5 in Table 2). In the figure, I express the social justice index on the scale of the original component items, where a value of 1 indicates that a given social justice policy issue is "not at all important" to the respondent, and 10 indicates it is "very important." Here, we see a significant positive association between the social justice policy index and issue-priority ratings regardless of framing condition. However, the magnitude of this association is made greater by the "equal opportunity" frame. From a different perspective, among respondents placing a high importance on social justice issues, the EO frame

leads to higher issue-priority ratings, compared with the economic frame; however, among respondents placing lower priority on social justice policies, the economic frame leads to higher issue-priority. The effect size is .12 sd (p=.01) in favor of the EO frame for the difference in predicted priority levels when the social justice index = 10 (90th percentile in the sample); however, mean ratings do not differ significantly across conditions (p=.27) when social justice index=5.75 (10^{th} percentile).

While the fitted models in Figure 2 demonstrate differential framing effects when considering each moderator on its own, Figure 2 does not address the question of whether frames have differential effects for people with different combinations of policy preferences. For example, some people might care a lot about both social justice issues and taxes, others might care a lot about one but not the other, and some might not care about either. Do frames have differential effects depending on the person's "value profile"? In column 6 of Table 2, I present the fitted model for equation 3 addressing this question. I find that not only does each moderator interact with the framing condition, but the tax-importance scale and the social justice index interact with each other (the three-way interaction between framing condition and the two moderators was not statistically significant, p=.82).

In Figure 3, I show the interactive relationships estimated in model 6 based on equation 3. In the left-hand panel, I show the interaction between tax-importance and the social justice index among respondents in the economic framing condition; in the right-hand panel, I show this interaction among respondents in the EO condition. In both panels, I place tax priority on the x-axis (in its original 10-point scale) starting at the 10th percentile of tax importance (x = 6) and I include fitted lines depicting three prototypical values of the social justice index (90th percentile = 10; 50th percentile = 8.5; 10th percentile = 5.75). From Figure 3, it is immediately evident there is always a negative association between tax-importance and issue-priority, as seen by the

negative slopes of the fitted lines. There is also always a positive association between the social justice index and issue-priority, as seen by the fact that the fitted lines for higher values of the social justice index are always elevated above the fitted lines for lower index values. The effects of the frames, however, differ for respondents depending on the combination of ratings they give to tax-importance and social justice issues.

<Figure 3>

To begin, consider respondents who give relatively low importance to both the amount we pay in taxes (tax importance=6, the 10th percentile in the sample) and to social justice issues (the "low social justice" index fitted lines). For such respondents, frames have no effect on issue prioritization. That is, their predicted priority levels are not statistically different across framing conditions (p=.25): compare point A on the left panel with point B on the right panel. However, among respondents who give relatively little importance to taxes (tax importance = 6) but who value social justice issues (middle and top fitted lines), the equal opportunity frame has a positive effect on average priority level. The effect sizes are .23 sd for median social justice index scores (point C vs. point D, p<.001) and .31 sd for high social justice index scores (point E vs. point F, p < .001). On the other hand, when people place a lot of importance on the amount we pay in taxes (tax importance = $10, 90^{\text{th}}$ percentile) and relatively little importance on social justice issues (bottom fitted lines), the economic frame has a positive effect on issue-priority with an effect size of .18 sd (p=.003): compare point G on the left panel with point H on the right panel. When respondents care a lot about taxes (tax importance =10) and care about social justice issues (middle and top fitted lines), frames have no effect on issue-priority ratings (p=.31 for point I vs. point J; p=.39 for point K vs. point L).

In sum, we learn from the fitted model in column 6 that among people who give relatively low importance to both taxes and social justice issues, economic and equal opportunity

frames yield similar issue-priority levels. The frames also lead to similar priority ratings among people who care about both taxes and social justice issues. However, framing matters when respondents' values are mixed. When people care a lot about taxes and relatively less about social justice issues, the economic frame is more effective than the EO frame. On the other hand, when people care relatively less about taxes but care about social justice issues, the EO frame is more effective than the economic frame.

Discussion

I present results from survey experiments with two independent samples showing how California voters' attitudes toward racial equity in education are affected by common issue frames. I find framing effects are moderated by people's policy values. First, compared with the equal opportunity (EO) frame, the economic frame elicited higher issue priority among respondents who placed greater importance on the amount we pay in taxes. This result replicated across two independent samples. Second, the equal opportunity frame elicited higher priority levels among respondents who placed greater importance on social justice issues (second poll). Adding nuance, I find framing effects differ depending on the combination of policy preferences held by respondents (second poll). Among respondents who place greater importance on social justice issues and lower importance on taxes, the equal opportunity frame elicits higher priority ratings. Among respondents who place greater importance on taxes but lower importance on social justice issues, the economic frame elicits higher priority ratings. However, when respondents value *both* the amount we pay in taxes and social justice issues, or value neither, the two frames elicit statistically equivalent priority ratings.

My focus in this study was people's attitudes toward advancing racial equity specifically. As discussed earlier, in the US, policies tend to receive less support when they target racial inequalities, compared with when they target social class inequalities (Bell, 2019; English &

Kalla, 2021; Gilliam, 2006; Valant & Newark, 2016). Consequently, some scholars argue racial frames should be avoided because they inadvertently make it harder for policies advancing racial justice to be adopted (English & Kalla, 2021)². In certain limited respects, some progress toward racial equity in education might be achieved while avoiding racial frames. For example, recent data show the percentage of students attending "high-poverty schools" (defined as schools in which more than 75% of students are FRPL-eligible) is highest for Black students (45%) and lowest for White students (8% [National Center for Education Statistics, 2021]). Therefore, policies framed around class inequities that improve the educational experiences of students in high-poverty schools would disproportionately benefit Black students. There are even certain specific manifestations of teachers' racial biases that might be productively addressed through universal policies. For example, evidence suggests standardized grading rubrics with clearly defined evaluation criteria can mitigate teachers' racial biases in their evaluation of student work (Quinn, 2020a).

However, there are dimensions of racial inequities in education that cannot be addressed through class-based or "race-neutral" policies. Policies promoting non-distributive aspects of equity, such as revising a curriculum centered around the accomplishments and perspectives of white people (Jeffers, 2019), will inevitably require direct discussions of race and racism. Additionally, teachers' racial stereotypes and racially biased expectations manifest in a variety of detrimental ways (Papageorge et al., 2020; Tenenbaum & Ruck, 2007; Wheeler & Petty 2001; Taylor & Walton, 2011). It is difficult to see how the impacts of teachers' racial biases can be fully addressed through class-based or race-neutral policies alone. Addressing these dimensions of racial inequities will require framing that overcomes the resistance of voters who are

 $^{^{2}}$ It is worth noting that framing experiments using samples of likely voters cannot address an important aspect of framing effects, that of the extent to which a frame can motivate otherwise inactive members of the electorate to vote; a frame that has no effect (or even negative effects) with current "likely voters" could nevertheless be effective overall if it motivates new people sympathetic with the message to become voters.

influenced by racist social constructions of minoritized students as undeserving of policy benefits (Schneider & Ingram, 1993). The present study suggests frames which help voters connect racial equity to other issues they care about may impact their prioritization of racial equity (e.g., by helping voters concerned with economic issues see the economic benefits of racial equity in education).

The lack of a framing main effect in this study suggests the EO and economic frames would be equally effective for a statewide voting population in a state like California. However, the two frames are not equally versatile. Linking educational outcomes to job opportunities for students can sensibly motivate action at many levels - be it the school, district, state, or federal level. In contrast, the economic frame works well only at macro levels of policymaking. Improving educational outcomes at the state or national level can reasonably be understood to have economic implications, but it stands to reason that decision-makers at the school-level will be less likely to believe that improved outcomes in their single school would impact the economy.

Because these are generalized frames targeting an issue, the EO and economic frames can be applied across many different policy proposals, or without reference to any specific policy proposal. Evidence suggests a given frame is more likely to influence opinion when it appears early (thus shaping voters' initial impressions), often (to compete with opposing ideas), and late (to remain in voters' memories) (Chong & Druckman, 2010). The flexibility of the EO and economic frames means more opportunities for application, which means potentially more influence on public opinion. To be clear, the application of these issue frames should be understood as part of the democratic process, not a subversion of it. Democratic debate drawing from multiple frames helps respondents more easily identify policies that are consistent with their values, and stabilizes public opinion (Chong & Druckman, 2007). This process differs from

that found with "equivalency framing effects" (Chong & Druckman, 2007; Tversky & Kahneman 1986), wherein different wording of logically equivalent statements nudge people toward different choices (e.g., when patients are more likely to choose a surgery when the 90% survival rate is given, versus the 10% mortality rate [McNeil et al., 1982]). Rather, the EO and economic frames make connections for voters between the issue and their values and highlight implications to consider when forming an opinion. Furthermore, for a given policy problem, public debate over whether a specific proposed policy is the optimal solution is necessary.

To be concrete, let us consider the implications of these results for debate on a specific policy: California Assembly Bill 520, known as the "California Diversifying the Teacher Workforce Grant Program." The bill sought to authorize grant funding for programs designed to improve the recruitment and retention of teachers of color in California. The bill was motivated by research showing that students of color experience benefits – academic and otherwise – when taught by a same-race teacher (e.g., Dee, 2005; Egalite & Kisida, 2018; Gershenson, et al., 2022; Lindsay & Hart, 2017). In this case, the policy problem and the solution center on racial inequity in education, rendering inoperable a class-based or universal policy frame that ignores race. Because this was designed as a statewide policy, the economic frame is applicable. When it comes to statewide messaging, the results of the present study suggest the EO or economic frame would have similar effects on constituents' support for the policy in the aggregate. Yet further targeting may be possible. In counties where prior voting patterns (e.g., on ballot initiatives) indicate a concern for taxes and less concern for social justice issues, the economic frame would likely elicit more support from constituents – or at least temper opposition – compared with the EO frame (and vice versa).³

³ Other frames tailored to the specifics of a given policy would also be worth considering; for example, with CA AB 520, frames highlighting the benefits of a diverse teaching force for all students and for life in a racially diverse democracy may be considered.

Framing and the "Achievement Gap" Discourse

As discussed above, the issue priority measure used in these surveys applies an "achievement gap Discourse" (Carey, 2014) attribute frame when eliciting priority levels. Equity-focused policy efforts which draw from this frame may be inherently limited in the support they can garner. Scholars have argued the achievement gap (AG) frame itself plays into, and contributes to, racist social constructions (e.g., Carey, 2014; Darby & Rury, 2018; FrameWorks Institute, 2010; Hillard, 2003; Ladson-Billings, 2006; Perry, 2003, Royal, 2012). Because the frame draws attention to differences in student-level academic outcomes across racialized groups - as opposed to the structural forces that shape these disparities - it evokes racist stereotypes and constructs White and Asian students as academically capable while constructing Black, Hispanic, and Native American students as incapable and thus undeserving of policy benefits (Darby & Rury, 2018; Hillard, 2003; Ladson-Billings, 2006). Consistent with this argument, experimental evidence has shown that exposure to a TV newscast reporting on racial AGs led viewers to express stronger racial stereotypes of Black students as uneducated (Quinn, 2020b). And as noted earlier, previous work showed survey respondents gave lower priority ratings to "closing the racial achievement gap" compared with "ending inequality in educational outcomes by race," and expressed stronger anti-Black/pro-White stereotypes after seeing AG language⁴ (Quinn et al., 2019; Quinn & Desruisseaux, 2022). It therefore may be the case that the AG language used in the item wording in the present study primes stereotypes drawing on racist social constructions (Schneider & Ingram, 1993), thus limiting respondents' priority levels. At the same time, the promising news from the present study is that issue frames aligned with individuals' values can increase the priority level voters give to "closing the

⁴ The measures used in the first round of data collection for the present study (modelled after Valant & Newark [2016]), were developed before my co-authors and I found, in separate surveys, the negative effect of "achievement gap" language on policy priority. For consistency across the two samples in the present study, I retained the original survey item language in the second around of data collection.

achievement gap." It may be the case, then, that the broader frame used to contextualize the AG will influence how the AG frame is interpreted, moderating the effect the AG frame has on people's attitudes (e.g., Patton Davis & Museus, 2019). More work needs to be done to understand if an increased support for addressing disparities would come at the cost of perpetuating racist stereotypes when the AG frame is applied.

Given these critiques of the AG frame, scholars have argued for its replacement with the "opportunity gap" (OG) frame (e.g., Milner, 2013; Carter & Welner, 2013). Instead of focusing on student outcomes, the OG frame calls attention to the unequal learning opportunities that lead to disparities. Employing the issue frames from the present study along with the OG frame may overcome inherent limitations of the AG frame. While it is possible to adopt the OG frame solely as a way of shifting attention from educational outputs to inputs, some scholars advance a deeper critique (e.g., Kendi, 2016; Kuchirko & Navfield, 2021). These scholars critique the content of the curriculum, the mastery of which is considered an "achievement," as well as the method by which mastery is primarily assessed – namely, standardized tests. Respondents in my sample who are similarly critical of standardized tests and the tactics used by accountabilitybased reformers vowing to "close the achievement gap" may assign low priority to closing achievement gaps, not because they do not care about racial equity, but because they have a different conception of what racial equity in education entails. More generally, an agenda that seeks racial equity in education should be sensitive to the many ways in which school systems might embody or perpetuate unjust social relations, including through curricular content and methods for measuring learning.

Limitations

When interpreting the results of this study, one should keep in mind that this study did not compare the effects of frames to voters' baseline priority levels, absent any issue frame

(given statistical power concerns). Although I find no main effect of each frame compared to the other, we cannot know whether both frames raise respondents' priority levels compared to baseline, or have no impact compared to baseline. A similar point applies to the moderation effects. For example, while I find the EO frame increases priority ratings compared with the economic frame among respondents who place lower importance on taxes, we cannot determine whether this occurs due to the EO frame raising priority levels above baseline, or due to the economic frame backfiring and lowering priority level among respondents who care relatively less about taxes (or some combination of the two). These results are therefore most useful in understanding the relative effectiveness of the economic and EO frames.

As with most studies using measures of explicit attitudes toward racial equity, social desirability bias must be considered. While social desirability could bias estimates of the mean or variance of the population's true priority levels, this would not on its own bias the framing main effect or moderation effects. The moderation effects would be biased if responsiveness to social desirability was differentially correlated with the moderator across conditions. Although I am unable to rule out this possibility, the anonymity of the online survey format serves as a mitigating force on social desirability (Tourangeau et al., 2000). I argue the most theoretically parsimonious explanation for the results is that the frames directly affect respondents' policy preferences in the manner predicted by framing theory. Furthermore, if participants' survey responses on an anonymous survey are motivated by social desirability, such motivation would also likely influence their expressed views and behaviors in other contexts.

The outcome variable in this study does not measure respondents' support for specific policy proposals. Because a specific policy proposal defines a solution to a problem, it contains assumptions about the underlying nature of the problem (Mettler & Soss, 2004). Endorsing a policy solution therefore requires that the voter shares those causal assumptions. Furthermore,

with specific policy proposals, support or opposition can be influenced by partisan affiliation. For example, liberal respondents may give high priority to reducing racial disparities in educational outcomes but may be opposed to school choice as a proposed solution (41% of Democrats, vs. 60% of Republicans, support school choice [Houston et al., 2022]). With these considerations in mind, it is theoretically and analytically useful to separate (1) one's general feeling of how important a problem is, with (2) one's support for specific proposed solutions to the problem. For these reasons, I focused on the effects of issue frames on the extent to which voters prioritized racial equity as an issue, separate from their views on specific policy proposals. A limitation to this measure, however, is that we cannot know which (if any) specific new behaviors or voting choices will change along with respondents' changes in equity priority. This study offers confirmation of the theoretical notion that frames interact with voters' prior values; the next step is to test how these changes in attitudes relate to changing behaviors or levels of support for specific policy proposals.

Finally, as alluded to above, robust democratic debate on policy issues involves considering any potential trade-offs inherent in specific policy choices. The frames in the present study did not explicitly encourage respondents to consider zero-sum scenarios in which a choice to fund equity-focused policies means forgoing the advancement of other values. Had respondents been encouraged to consider specific trade-off scenarios, their responses may have differed.

Future Research

Like much of the research on framing effects, this study examines short-term effects of issue frames. Some research has shown the effects of experimentally manipulated frames to be short-lived (Druckman & Nelson, 2003). While this might suggest the long-term consequences of any single exposure to a frame is minimal, it also suggests that people may be constantly

susceptible to the effects of newly encountered frames (Chong & Druckman, 2007). Other research suggests that the role of timing is more complex. In one experiment, competing messages received at the same time canceled each other out; when the messages were separated by days or weeks, most respondents gave more weight to the recent frame. However, when respondents deliberately processed the information in the frames, they gave more weight to the frame they encountered first (Chong & Druckman, 2010). Through future research, it will be important to understand the duration of framing effects for educational equity, and the aspects of frames and contexts that affect the magnitude and staying power of their impacts.

Research shows that framing effects can depend on the messenger. A given frame tends to be more effective in shifting opinions when it is applied by a more credible source (Chong & Druckman, 2007; Druckman, 2001; Lecheler & de Vreese, 2019). Partisans are more likely to be moved by a frame if it is applied by a fellow partisan (Slothuus, 2010). In the item wording in the present study, the economic frame was attributed to economists. One possibility is this attribution lends credibility to the frame, compared with attributing the frame to, say, policymakers. On the other hand, some people might associate economists with conservatism or neoliberalism, which could give a partisan tinge to the message. Future research should examine messenger effects in the context of racial equity frames in education and explore how such effects may differ depending on the audience.

Additional issue frames for equity beyond the two included in this study will be worth studying. This might include frames that emphasize implications of educational inequity for social stability or civic and democratic functioning, scientific innovation, or the moral value of "investing in our children" (Eng, 2016; FrameWorks Institute, 2009). Prior research on frames more generally can inform the design of new frames specific to racial equity in education. For example, evidence suggests frames are more effective at building support for policies when they

(a) lead with the solution, rather than the problem; (b) illustrate how the audience has a stake in the policy issue; (c) emphasize the policy's role in preventing future harm; and (d) focus on situations rather than individuals (e.g., avoiding the "triumphant individual" frame and avoiding debates about intentional racial bias) (Davey, 2009; Gilliam, 2006).

Conclusion

We know that language and framing matter for shaping public opinion, and we know the effects of issue frames can vary by individuals' prior values. We also know that White Americans are more supportive of policies designed to advance class-based educational equity compared to policies advancing racial equity. The present study suggests that commonly used issue frames for racial equity in education – when targeted to voters' policy values – can impact the extent to which voters prioritize racial equity in education.

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Figure 1. Framing effect moderation by "tax importance," 2018 Sample (N=2367).

Note. Outcome: "Thinking about all of the important issues facing the country today, how high of a priority do you think it is to close the achievement gaps between White students and Black or Latino/a students?" [1=not a priority/5=essential; also given "don't know" option, dropped from models]. Graph depicts fitted model that interacts framing condition with "tax importance" item: "There are many issues currently facing the country. For each of the following issues, please tell me how important each one is for you on a scale from ONE to TEN with TEN being VERY important and a ONE being NOT AT ALL important. You can use any number from one to ten: the amount we pay in taxes" (also given "don't know" option, dropped). X-axis begins at 10th percentile of sample ratings (90th percentile = 10). Sample weights applied. See Appendix C, Table C1 for model estimates. See Appendix A for full survey text.

Figure 2. Framing effect moderation by "tax importance" (left panel) and social justice policy index (right panel), 2020 Sample (n=1888).



Note. Outcome: "In thinking about the many important issues facing our country, how would you rate closing the racial achievement gap in education?" [1=not a priority/5=top priority; also given "don't know" option, dropped from models]. Left panel depicts fitted model that interacts framing condition with "tax importance" item: "Here are some priorities elected officials in California could address. Please indicate how important each of these is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten: the amount we pay in taxes" (also given "don't know" option, dropped). Right panel depicts fitted model that interacts framing condition with index of social justice issues. X-axes begin at 10th percentile of sample ratings (90th percentile = 10). Sample weights applied. See Table 2 for model estimates. See Appendix A for full survey text.





Note. Outcome: "In thinking about the many important issues facing our country, how would you rate closing the racial achievement gap in education?" [1=not a priority/5=top priority; also given "don't know" option, dropped from models]. "Tax importance" item: "Here are some priorities elected officials in California could address. Please indicate how important each of these is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten: the amount we pay in taxes" (also given "don't know" option, dropped). X-axes begin at 10th percentile of sample ratings (90th percentile = 10). Social justice index combines importance ratings on 4 policy issues; fitted lines shown for 90th, 50th, and 10th percentiles (index = 10, 8.5, and 5.75, respectively). Labeled points A, B, C, D, E, and F indicate predicted priority ratings for respondents across conditions who give taxes low importance, at varying levels of social justice importance scores; Points G, H, I, J, K, and L represents analogous values for respondents who place high importance on taxes. Sample weights applied. Asterisks by letters indicate statistical significance of post-hoc test comparing predicted values across faming conditions (** p < 0.01, *** p < 0.001). See Table 2 for model estimates. See Appendix A for full survey text.

	Econom	Equal Opportunity				inity	
	<u>Econom</u> Mean	<u>SD</u>	N	Mean	SD	N	п
		2	018 Calif	ornia Vot	er Sample	e	P
Demographics						-	
Asian	0.07		1182	0.07		1185	0.93
Black	0.05		1182	0.05		1185	0.98
Hispanic	0.24		1182	0.24		1185	0.65
Multiracial	0.02		1182	0.02		1185	0.43
White	0.61		1182	0.62		1185	0.69
Another race	0.01		1182	0.01		1185	0.40
Female	0.53		1182	0.53		1185	0.99
Democrat	0.46		1182	0.46		1185	0.95
Republican	0.27		1182	0.27		1185	0.97
Independent	0.24		1182	0.25		1185	0.92
Another Party	0.02		1182	0.01		1185	0.19
Tax Importance	8.30	1.94	1182	8.34	1.96	1185	0.68
Tax Importance (std)	0.00	1.00	1182	0.01	1.01	1185	0.68
Issue-priority (outcome)	3.75	1.06	1182	3.73	1.12	1185	0.72
High issue-priority	0.62		1182	0.63		1185	0.88
		2	020 Calif	ornia Vot	er Sample	e	
Demographics							
Asian	0.08		945	0.09		943	0.97
Black	0.04		945	0.04		943	0.99
Hispanic	0.28		945	0.28		943	0.81
Multiracial	0.03		945	0.02		943	0.74
White	0.55		945	0.56		943	0.78
Another race	0.01		945	0.02		943	0.87
Female	0.51		945	0.51		943	0.86
Another gender	0.01		945	0.01		943	0.86
Democrat	0.45		945	0.45		943	0.90
Republican	0.24		945	0.26		943	0.51
Independent	0.26		945	0.25		943	0.57
Another party	0.03		945	0.02		943	0.59
Tax Importance	8.57	1.81	945	8.57	1.76	943	0.96
Tax Importance (std)	0.00	1.01	945	0.00	0.99	943	0.96
Soc. Just. Index	8.12	1.69	945	8.15	1.62	943	0.67
Soc. Just. Index (std)	-0.01	1.02	945	0.01	0.98	943	0.67
Issue-priority (outcome)	3.31	1.13	945	3.37	1.19	943	0.19
High issue-priority	0.48		945	0.50		943	0.41

Table 1.

Weighted Descriptive Statistics by Framing Condition (2018 and 2020 Samples)

Note. p-value tests null hypothesis of equal means across framing conditions. Items without *SD* are binary indicator variables for row category. Gap priority: how much of a priority respondent believes it is to close racial achievement gaps $(1 = not \ a \ priority, 2 = low \ priority, 3 = medium \ priority, 4 = high \ priority, 5 = top \ priority); wording varies slightly across survey years. See Appendix A for item wording and policy items. Tax importance: "Here are some priorities elected officials in California could address. Please indicate how important each of these is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten...the amount we pay in taxes" (also given "don't know" option, dropped) Soc Just Index: mean importance rating for: criminal justice reform; racism + racial justice; housing + homelessness; quality of public schools.$

Table 2.

Linear regression mod	lels predicting the ex	tent to which respo	ndents prioritize raci	al inequality in educ	cational outcomes (C	A Voters 2020)
	(1)	(2)	(3)	(4)	(5)	(6)
	Priority	Priority	Priority	Priority	Priority	Priority
Econ Frame	-0.0574	-0.0454	-0.0450	-0.0575	-0.0455	-0.0472
	(0.0431)	(0.0285)	(0.0284)	(0.0426)	(0.0299)	(0.0293)
Tax importance	-0.0942***		-0.220***	-0.161***		-0.275***
-	(0.0231)		(0.0211)	(0.0293)		(0.0250)
Soc Just Index		0.585^{***}	0.629***		0.628^{***}	0.675***
		(0.0242)	(0.0246)		(0.0327)	(0.0318)
Econ Frame*Tax importance		. ,		0.129**		0.138***
1				(0.0413)		(0.0382)
Econ Frame*Soc				× /	-0.0824^{*}	-0.101*
Just Index						
					(0.0400)	(0.0380)
Tax importance						0.0525^{**}
*Soc Just Index						
						(0.0176)
Intercept	3.370***	3.365***	3.365***	3.370^{***}	3.365***	3.355***
	(0.0447)	(0.0289)	(0.0272)	(0.0448)	(0.0282)	(0.0258)
N	1888	1888	1888	1888	1888	1888
R^2	0.007	0.257	0.291	0.010	0.258	0.298

Note. Standard errors clustered on county in parentheses. Sample weights applied. Outcome: "In thinking about the many important issues facing our country, how would you rate closing the racial achievement gap [between White students and Black and Latino students] in education? [1=not a priority/5=top priority; also given "don't know" option, dropped from models]. Tax importance (standardized to mean=0, sd=1): "Here are some priorities elected officials in California could address. Please indicate how important each of these is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten...the amount we pay in taxes" (also given "don't know" option, dropped) Soc Just Index (standardized to mean=0, sd=1): mean importance rating for criminal justice reform; racial justice; housing + homelessness; quality of public schools. See Appendix A for full survey text. p < 0.10, p < 0.05, p < 0.01, p < 0.001

Appendix A. Survey Items

2018 Survey (Items listed below in order of appearance on the full survey)

Policy Priorities (Predictors/moderator)

There are many issues currently facing the country. For each of the following issues, please tell me how important each one is for you on a scale from ONE to TEN with TEN being VERY important and a ONE being NOT AT ALL important. You can use any number from one to ten. *[NOTE: "don't know" was also an option]*

[order randomized]: Gun violence Opioid addiction Threats from North Korea Foreign interference in our elections Unemployment/underemployment Poverty The quality of our public schools Climate change Racism/racial inequality Immigration The cost of healthcare The amount we pay in taxes¹

¹ Moderator

Outcome: Gap Prioritization; adapted from Valant & Newark (2016)

In the United States today, White students usually score higher than Black and Latino/a students on math and reading tests.

[Economic Framing] Economists have argued that investing in closing achievement gaps in the US will help improve our country's economic health and global competitiveness.

[Equal Opportunity Framing] As a result, Black and Latino/a students often have lower educational attainment and fewer job opportunities compared to White students.

Thinking about all of the important issues facing the country today, how high of a priority do you think it is to close the achievement gaps between White students and Black or Latino/a students? Is it essential, a high priority, a medium priority, a low priority, or not a priority? *Essential High priority Medium priority Low priority Low priority Not a priority DON'T KNOW*

2020 Survey (Items listed below in order of appearance on the full survey)

Policy Priorities (Moderators)

Here are some priorities elected officials in California could address. Please indicate how important each of these is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten. *[NOTE: "don't know" was also an option]*

[order randomized]: The economy and jobs The amount we pay in taxes² The quality of our public schools¹ Housing and homelessness¹ Criminal justice reform¹ Racism and racial justice¹

¹Part of "social justice" index moderator ²Tax importance moderator

Outcome: Gap Prioritization; adapted from Valant & Newark (2016)

In the United States today, white and Asian students score higher on average on math and reading tests than do black and Latino students.

[Economic Framing] Economists have argued that investing in closing these achievement gaps in the US will help improve our country's economic health and global competitiveness.

[Equal Opportunity Framing] As a result, black and Latino students often have lower educational attainment and fewer job opportunities compared to white and Asian students.

In thinking about the many important issues facing our country, how would you rate closing the racial achievement gap in education? Do you think that it is a top priority, a high priority, a medium priority, a low priority, or that it is not a priority?

Top priority High priority Medium priority Low priority Not a priority DON'T KNOW

Table B1.

2018 Analytic Sample and	d Dropped O	bservatio	ons				
	Analytic sample			Γ	Dropped		
	Mean	SD	Ν	Mean	SD	Ν	р
Demographics							
Asian	0.07		2367	0.10		133	0.06
Black	0.05		2367	0.05		133	0.90
Hispanic	0.24		2367	0.22		133	0.49
Multiracial	0.02		2367	0.03		133	0.37
White	0.61		2367	0.56		133	0.15
Another race	0.01		2367	0.04		133	0.03
Female	0.53		2367	0.59		133	0.17
Democrat	0.46		2367	0.41		133	0.33
Republican	0.27		2367	0.22		133	0.17
Independent	0.24		2367	0.35		133	0.01
Another party	0.02		2367	0.01		133	0.63
Tax importance	8.32	1.95	2367	8.41	2.02	118	0.46
Gap-priority	3.74	1.09	2367	3.47	1.53	5	0.66
High gap-priority	0.63		2367	0.63		5	0.98

Appendix B. Comparisons of Analytic Samples and Dropped Observations

Note. p-value tests null hypothesis of equal means in analytic and dropped samples. Items without *SD* are binary indicator variables for row category. Gap-priority: "In thinking about the many important issues facing our country, how would you rate closing the racial achievement gap in education? [1=not a priority/5=top priority; also given "don't know" option, dropped from models]. Tax importance (standardized to mean=0, sd=1): "Here are some priorities elected officials in California could address. Please indicate how important each of these is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten (also given don't know option, dropped)...the amount we pay in taxes"

	Ana	lytic Sam	ple	Ι	Dropped		
	Mean	SD	N	Mean	SD	Ν	р
Demographics							
Asian	0.09		1888	0.11		112	0.466
Black	0.04		1888	0.02		112	0.014
Hispanic	0.28		1888	0.32		112	0.276
Multi-racial	0.03		1888	0.01		112	0.040
White	0.56		1888	0.50		112	0.131
Another race	0.02		1888	0.04		112	0.187
Female	0.51		1888	0.69		112	0.000
Another gender	0.01		1888	0.01		112	0.879
Democrat	0.45		1888	0.39		112	0.288
Republican	0.25		1888	0.18		112	0.197
Independent	0.26		1888	0.36		112	0.003
Another party	0.02		1888	0.02		112	0.728
Tax importance	8.57	1.79	1888	8.29	2.29	101	0.220
Soc. Just. index	8.13	1.66	1888	8.08	1.72	103	0.802
Soc. Just. Index component	ets						
public sch. quality	8.54	1.85	1877	8.08	2.00	95	0.025
homelessness	8.49	1.97	1887	8.57	1.73	102	0.696
criminal just. Reform	7.82	2.12	1871	7.65	2.29	97	0.517
racism	7.67	2.55	1880	7.86	2.27	101	0.506
Gap-priority	3.34	1.16	1888	2.55	1.38	8	0.057
High gap-priority	0.49		1888	0.12		8	0.001

Table B2. 2020 Analytic Sample and Dropped Observations

Note. p-value tests null hypothesis of equal means in analytic and dropped samples. Items without *SD* are binary indicator variables for row category. Gap-priority: "In thinking about the many important issues facing our country, how would you rate closing the racial achievement gap in education? [1=not a priority/5=top priority; also given "don't know" option, dropped from models]. Tax importance (standardized to mean=0, sd=1): "Here are some priorities elected officials in California could address. Please indicate how important each of these is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten (also given don't know option, dropped)...the amount we pay in taxes" Soc Just Index is mean importance rating for: school quality, housing + homelessness, criminal justice reform, racism + racial justice.

Table C1.

Motivational Framing	Effect Moderation (201	8 Sample).	
	(1)	(2)	(3)
	Priority	Priority	Priority
Econ framing	0.0139	0.0131	0.0127
-	(0.0380)	(0.0382)	(0.0372)
Tax Importance (std)		-0.0429	-0.0976**
		(0.0305)	(0.0289)
Econ*Tax (std)			0.110**
			(0.0360)
Intercept	3.731***	3.732***	3.733***
-	(0.0440)	(0.0439)	(0.0441)
N	2367	2367	2367
R^2	0.000	0.002	0.004

Appendix C. Fitted Models and Sensitivity Analyses

Note. Standard errors clustered on county in parentheses. Outcome: "Thinking about all of the important issues facing the country today, how high of a priority do you think it is to close the achievement gaps between White students and Black or Latino/a students?" [1=not a priority/5=essential; also given "don't know" option, dropped from models]. Tax Importance (standardized to mean=0, sd=1): "There are many issues currently facing the country. For each of the following issues, please indicate how important each one is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten (also given don't know option, dropped)...the amount we pay in taxes" $^{\sim} p < 0.10$, $^{*} p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

Table C2.

Motivational Framing Effect Moderation (2018 Sample), adjusting for measurement error in moderator (assumed reliability for tax importance = 0.70, transformed using Kelley's true score formula).

	(1)	(2)	(3)
	Priority	Priority	Priority
Econ framing	0.0139	0.0131	0.0125
	(0.0380)	(0.0382)	(0.0372)
Tax Importance (std)		-0.0613	-0.139**
(312)		(0.0435)	(0.0412)
Econ*Tax			0.158**
			(0.0515)
Intercept	3.731***	3.732***	3.733***
-	(0.0440)	(0.0439)	(0.0441)
N	2367	2367	2367
R^2	0.000	0.002	0.004

Note. Standard errors clustered on county in parentheses. Outcome: "Thinking about all of the important issues facing the country today, how high of a priority do you think it is to close the achievement gaps between White students and Black or Latino/a students?" [1=not a priority/5=essential; also given "don't know" option, dropped from models]. Tax importance (standardized to mean=0, sd=1): "There are many issues currently facing the country. For each of the following issues, please indicate how important each one is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten (also given don't know option, dropped)...the amount we pay in taxes" $\tilde{p} < 0.10$, *p < 0.05, **p < 0.01, ***p < 0.001

	(1)	(2)	(3)
	Priority	Priority	Priority
Econ framing	0.0161	0.0162	0.0100
Leon manning	(0.0644)	(0.0645)	(0.0630)
T		0.0264	0.110*
Tax Importance		-0.0264	-0.118
(std)			
		(0.0538)	(0.0500)
Econ*Tax			0.185^{**}
			(0.0621)
cut1	-2.965***	-2.965***	-2.967***
	(0.129)	(0.129)	(0.130)
cut2	-2.019***	-2.019***	-2.020***
	(0.0925)	(0.0927)	(0.0929)
cut3	-0.524***	-0.524***	-0.522***
Cuto	(0.0778)	(0.0783)	(0.0786)
cut/	0 939***	0.940***	0 944***
Cult	(0.0754)	(0.0761)	(0.0761)
N	2367	2367	2367

Table C3.

Motivational Framing Effect Moderation, Ordered logit models (2018 Sample)

Note. Standard errors clustered on county in parentheses. Outcome: "Thinking about all of the important issues facing the country today, how high of a priority do you think it is to close the achievement gaps between White students and Black or Latino/a students?" [1=not a priority/5=essential; also given "don't know" option, dropped from models]. Tax importance (standardized to mean=0, sd=1): "There are many issues currently facing the country. For each of the following issues, please indicate how important each one is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten (also given don't know option, dropped)...the amount we pay in taxes" $^{\sim} p < 0.10$, $^{*} p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

Table C4.

Linear regression models predicting extent to which respondents prioritize educational inequality by race (2020 Sample), adjusting for predictor reliability (assumed reliability for survey scale predictors = 0.70, transformed using Kelley's true score formula).

	(1)	(2)	(3)	(4)	(5)	(6)
	Priority	Priority	Priority	Priority	Priority	Priority
Econ Frame	-0.0574	-0.0454	-0.0450	-0.0575	-0.0456	-0.0472
	(0.0431)	(0.0285)	(0.0284)	(0.0426)	(0.0299)	(0.0293)
Tax	-0.135***		-0.314***	-0.229***		-0.393***
Importance						
	(0.0330)		(0.0301)	(0.0419)		(0.0358)
Soc Just Index		0.835^{***}	0.898^{***}		0.897^{***}	0.965^{***}
		(0.0346)	(0.0351)		(0.0467)	(0.0455)
Econ				0.184^{**}		0.196***
Frame*Tax						
Importance						
				(0.0590)		(0.0545)
Econ					-0.118*	-0.145*
Frame*Soc						
Just Index						
					(0.0572)	(0.0543)
Tax						0.107^{**}
Importance*S						
oc Just Index						
	***	***	444	***	***	(0.0360)
Intercept	3.370***	3.365***	3.365***	3.370***	3.365***	3.356***
	(0.0447)	(0.0289)	(0.0272)	(0.0448)	(0.0283)	(0.0258)
N	1888	1888	1888	1888	1888	1888
R^2	0.007	0.257	0.291	0.010	0.258	0.298

Note. Sampling Weights applied. Standard errors clustered on county in parentheses. Outcome: "In thinking about the many important issues facing our country, how would you rate closing the racial achievement gap in education? [1=not a priority/5=top priority; also given "don't know" option, dropped from models]. Tax importance (standardized to mean=0, sd=1): "Here are some priorities elected officials in California could address. Please indicate how important each of these is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten (also given don't know option, dropped)...the amount we pay in taxes" Soc Just Index (standardized to mean=0, sd=1): mean priority rating for: school

quality, housing + homelessness, criminal justice reform, racism + racial justice. ~ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

Table C5.

	(1) (2) (3) (4) (5)				(5)	(6)
	Priority	Priority	Priority	Priority	Priority	Priority
	0.107	0.1.40**	0.100*	0.0070	0 1 1 1 **	0.10.1*
Econ Frame	-0.106	-0.140	-0.139	-0.0972	-0.141	-0.134
	(0.0671)	(0.0505)	(0.0566)	(0.0667)	(0.0531)	(0.0594)
Tax	-0.109**		-0.401***	-0.202***		-0.487***
Importance						
	(0.0380)		(0.0427)	(0.0500)		(0.0501)
Soc Just Index		1.119^{***}	1.237^{***}		1.200^{***}	1.340^{***}
		(0.0569)	(0.0623)		(0.0756)	(0.0752)
Econ			· · · ·	0.178^{*}		0.228**
Frame*Tax						
Importance						
portunite				(0.0711)		(0.0709)
Fcon				(0.0711)	-0.156~	-0 194*
Econ Frame*Soc					-0.150	-0.174
Just Index						
Just muex					(0.0921)	(0.0922)
Τ					(0.0621)	(0.0052)
Tax						0.116
Importance*S						
oc Just Index						
	***		444	***	***	(0.0266)
cut1	-2.233***	-2.749***	-2.832***	-2.231***	-2.751***	-2.828***
	(0.0938)	(0.114)	(0.116)	(0.0933)	(0.115)	(0.117)
cut2	-1.434***	-1.789***	-1.822***	-1.430***	-1.791***	-1.801***
	(0.0668)	(0.0711)	(0.0725)	(0.0668)	(0.0722)	(0.0758)
cut3	-0.0103	0.00526	0.0351	-0.00475	0.00247	0.0661
	(0.0757)	(0.0552)	(0.0519)	(0.0766)	(0.0538)	(0.0498)
cut4	1.664^{***}	1.978 ^{***}	2.034***	1.671 ^{***}	1.980^{***}	$2.067^{**\acute{*}}$
	(0.0966)	(0.0926)	(0.0904)	(0.0984)	(0.0918)	(0.0874)

Ν	1888	1888	1888	1888	1888	1888
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Note. Sampling Weights applied. Standard errors clustered on county in parentheses. Outcome: "In thinking about the many important issues facing our country, how would you rate closing the racial achievement gap in education? [1=not a priority/5=top priority; also given "don't know" option, dropped from models]. Tax importance (standardized to mean=0, sd=1): "Here are some priorities elected officials in California could address. Please indicate how important each of these is for you on a scale from ONE to TEN with TEN being VERY important and ONE being NOT AT ALL important. You can use any number from one to ten (also given don't know option, dropped)...the amount we pay in taxes" Soc Just Index (standardized to mean=0, sd=1): mean priority rating for: school quality, housing + homelessness, criminal justice reform, racism + racial justice. p < 0.10, p < 0.05, p < 0.01, p < 0.01, p < 0.01

Motivational Fram	ing Effects on Issu	e-Priority, by Politica	ll Party (2018 Sample)
	(1)	(2)	(3)
	Democrat	Republican	Independent
Econ framing	0.0241	0.0416	-0.0105
	(0.0553)	(0.0636)	(0.0806)
Intercept	4.031***	3.258***	3.657***
	(0.0419)	(0.0575)	(0.0480)
Ν	1118	641	581
R^2	0.000	0.000	0.000

Appendix D. Analyses by Respondent Political Party and Race

Note. Sampling weights applied. Standard errors clustered on county in parentheses. Outcome: "Thinking about all of the important issues facing the country today, how high of a priority do you think it is to close the achievement gaps between White students and Black or Latino/a students?" [1=not a priority/5=essential; also given "don't know" option, dropped from models]. Reference group is "equal opportunity" frame condition. $\tilde{p} < 0.10$, * p < 0.05, ** p < 0.01, *** p < 0.001

Table D2.

Table D1

Motivational Fran	ming Effects of	n Issue-Priority.	by Political Par	tv (2020 Sample).
1.1001.00000000000000000000000000000000					

	(1)	(2)	(3)
	Democrat	Republican	Independent
Econ framing	-0.203**	0.00182	0.113
	(0.0667)	(0.110)	(0.143)
Intercept	3.792***	2.824***	3.156***
	(0.0534)	(0.0628)	(0.0737)
Ν	845	474	492
R^2	0.010	0.000	0.002

Note. Sampling weights applied. Standard errors clustered on county in parentheses. Outcome: "In thinking about the many important issues facing the country, how would you rate closing the racial achievement gap in education?" [1=not a priority/5=top priority; also given "don't know" option, dropped from models]. Reference group is "equal opportunity" frame condition.

p < 0.10, p < 0.05, p < 0.01, p < 0.001

	(1)	(2)	(3)	(4)	(5)
	Asian	Black	Hispanic	Multi-racial	White
Econ framing	0.0791	0.216~	-0.0775	0.182	0.0302
	(0.147)	(0.106)	(0.0858)	(0.342)	(0.0498)
Intercept	3.596***	4.153***	3.902***	3.378***	3.658***
-	(0.125)	(0.0879)	(0.0611)	(0.301)	(0.0542)
N	210	109	474	47	1506
R^2	0.002	0.018	0.001	0.006	0.000

Table D3. Motivational Framing Effects on Issue-Priority by Respondent Race (2018 Sample)

Note. Sampling weights applied. Standard errors clustered on county in parentheses. Outcome: "Thinking about all of the important issues facing the country today, how high of a priority do you think it is to close the achievement gaps between White students and Black or Latino/a students?" [1=not a priority/5=essential; also given "don't know" option, dropped from models]. Reference group is "equal opportunity" frame condition. $\sim p < 0.10$, *p < 0.05, **p < 0.01, ***p < 0.001

Table D4. Motivational Framing Effects on Issue-Priority, by Respondent Race (2020 Sample).

	\mathcal{O}			1 /	
	(1)	(2)	(3)	(4)	(5)
	Asian	Black	Hispanic	Multi-racial	White
Econ framing	0.223	-0.230	-0.0746	0.305	-0.0923
	(0.187)	(0.208)	(0.0827)	(0.428)	(0.0637)
Intercept	2.751***	4.145***	3.737***	2.976^{***}	3.248***
-	(0.0863)	(0.164)	(0.0645)	(0.328)	(0.0454)
N	161	78	525	48	1056
R^2	0.009	0.012	0.001	0.012	0.002

Note. Sampling weights applied. Standard errors clustered on county in parentheses. Outcome: "In thinking about the many important issues facing the country, how would you rate closing the racial achievement gap in education?" [1=not a priority/5=top priority; also given "don't know" option, dropped from models]. Reference group is "equal opportunity" frame condition.

 $\tilde{p} < 0.10, p < 0.05, p < 0.01, p < 0.001$