Makers and Takers: How We (Don't) Tax the Poor Reduces Support for Taxing and Redistribution

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Abstract

The United States tax system exempts 47% of people from paying federal income taxes. Because the median voter still pays income taxes, however, this difference in tax burden may undercut support for more expansive redistribution. We argue people think about taxation as a public goods problem in which everyone is required to contribute something. To test this hypothesis, we designed a pair of incentivized experiments in which taxing and spending policies are randomly paired. Supporting our expectations, we find that Americans (1) believe that policies that tax the poor are fairer and (2) are more likely to choose policies that tax the poor holding distributive outcomes constant. Further, in two rhetoric experiments we find respondents are less supportive of politicians who exempt the poor from paying taxes to finance expanded social programs. A more progressive tax in which the poor pay nothing may therefore paradoxically undercut total redistribution.

Keywords taxation, redistribution, fairness, experiment

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"There are 47 percent of the people who will vote for the president no matter what. There are 47 percent who are with him, who are dependent upon government…. These are people who pay no income tax. Forty-seven percent of Americans pay no income tax. So our message of low taxes doesn't connect…. What I have to do is convince the 5 to 10 percent in the center that are independents, that are thoughtful, that look at voting one way or the other depending upon in some cases emotion, whether they like the guy or not."

-Then Republican presidential candidate Mitt Romney, May 17, 2012[1]

A core issue of political conflict is about who gets what and from whom, (re)distributive issues fundamentally shaped by government decisions about taxing and spending. As illustrated by the epigraph above, politicians and the mass public alike are concerned that some people are not paying their fair share of taxes and are, instead, reaping the rewards of programs financed by others. Of course, then-candidate Mitt Romney omits the fact that people who do not pay federal income taxes do indeed pay a number of other government taxes. Nonetheless, this rhetoric is powerful because it invokes a deep-seated concern in human psychology regarding the production of public goods: free riders are taking advantage of the generosity of others. Do (progressive) tax policies that remove low income voters from the tax rolls reduce support for otherwise progressive bundles of taxing and spending?

Redistribution and increased social spending were central topics in the 2020 Democratic Primary as a number of candidates in the field proposed considerable expansions of universal social programs like reduced college tuition and "Medicare for All."[2] The plans to finance these

[1] https://www.realclearpolitics.com/lists/top_moments_2012/romney_47_percent.html

[2] For example, Elizabeth Warren's plan for cancelling student loan debt and making public college education free would be financed by a wealth tax on "ultra-millionaires" (https://elizabethwarren.com/plans/affordable-higher-education). Similarly, Bernie Sanders's plan for this involved taxing stock trades, which would be a de facto tax on higher income individuals (https://berniesanders.com/issues/free-college-cancel-debt/).

programs often involved increasing taxes only on the wealthiest Americans, thereby creating an even more progressive tax structure. A common argument for these tax increases was that the wealthy were not paying their fair share. However, this financing plan is at odds with the empirical observation that countries with more redistributive social spending tend to have more regressive (less progressive) tax systems (e.g. Beramendi and Rehm 2016; Berens and Gelepithis 2019). That is, countries that achieve greater redistribution tend to achieve it by taxing all individuals more and using their larger revenue streams to support broader spending. In these more regressive tax systems, the burden of financing social spending is shared more widely across the income distribution. In contrast, progressive taxation targets the higher end of the income distribution with higher tax rates and limits the tax rate on the poor, or in some cases, even removes the poor entirely from the tax rolls as is the case with federal income tax in the United States. But removing low income citizens from the tax rolls may enhance perceptions that those who benefit from government are free riding on those who do pay taxes.

A significant amount of scholarship has been dedicated to explaining attitudes towards taxing and spending in the broader context of economic inequality and redistribution. Canonical models of redistribution suggest that as inequality increases so too should demand for redistribution (Meltzer and Richard 1981). Of course, even in a setting where taxation and spending are pure transfers (there is no value creation by government), greater redistribution could be accomplished by any combination of increasing taxes on higher income individuals and increasing spending directed toward low income individuals. Indeed, extant work generally focuses on attitudes about these two policy levers, either attitudes towards increasing taxes on the wealthy (e.g. Bartels 2005; 2008; Franko, Tolbert, and Witko 2013; Kuziemko et al. 2015; Scheve and Stasavage 2016) or attitudes towards increasing spending on the poor (e.g. Fong

2001; Gilens 1999; van Oorschot 2000). But this ignores the possibility that attitudes about support for spending are affected by how taxes revenue is generated, and for groups other than the rich.

Given contemporary debates in American politics about overhauling taxing and spending, it is important to understand what Americans' preferences for taxation are and what types of tax systems they consider to be fair. Here, we consider whether support for redistribution is affected by a previously unexplored factor, attitudes towards taxing the poor. Specifically, we test whether fairness concerns regarding taxation apply both up and *down* the income distribution. Prior work has demonstrated that beliefs about fairness are an important determinant of Americans' preferences for taxing the wealthy (e.g. Scheve and Stasavage 2016). However, it is not clear if beliefs about fairness also transfer down the income distribution and influence beliefs about how much the poor should pay in taxes. Do Americans' judge tax systems as less fair when the poor do not pay taxes? And if so, does taxing the poor increase support for redistributive social spending ceteris paribus?

We propose that people think about taxing as a public goods problem. Like public goods, people might expect that everyone contributes to generating government revenue. When the poor do not pay taxes, other citizens, like Mitt Romney in the opening epigraph, may view their non-contribution as free riding (Delton et al. 2012). This is analogous to the categorization of welfare beneficiaries as free riders who gain from taxes paid by others without making an effort to contribute (e.g. Petersen 2012). Free riders are likely to be moralized and punish by others (e.g. Delton et al. 2012; Fehr and Gachter 2000). Similarly, in the absence of a mechanism to directly punish individual free riders, people have been shown to reduce their willingness to finance

social insurance programs, even if they personally benefit from them (e.g. Bokemper, Fang, and Huber 2020).

Thus, we examine whether removing the poor from the tax rolls undermines Americans' beliefs about fairness and support for redistributive taxing and spending. We use a series of four experiments that vary whether or not the poor pay taxes. In the Experiment 1 and Experiment 2, participants were placed in a costly choice environment in which they evaluated the fairness of taxing and spending policies and chose the policy that they most preferred. Taxing and spending policies are randomized separately, which allows us to isolate the effect of varying whether the poor pay taxes across a number of distributional outcomes. The results of these experiments support a public goods theory of tax preferences. Participants were more likely to choose policies that required the poor to pay taxes and rated them as fairer than policies that did not tax the poor. Further, at similar levels of government revenue, participants generally preferred progressive taxation that required the poor pay taxes to regressive or flat tax plans.

In the Experiment 3 and Experiment 4, we address issues of external validity with survey-based experiments. Specifically, we examine whether politicians making fairness-based arguments about the poor not paying taxes undermines support for candidates who propose the expansion of social programs. Consistent with the findings of the first two experiments, participants are considerably less likely to support a candidate when the candidate is criticized for funding an increase in social spending by raising taxes only on higher income citizens (e.g., not taxing the poor). Taken together, the experiments presented here provide strong evidence for a public goods theory of tax preferences. These results also have far reaching implications for building support for the expansion of social policy programs in the United States.

Redistribution, Social Spending, and Taxation

There is a vast literature on public support for redistribution and government spending. In the most straightforward self-interested accounts, citizens support redistribution if they stand to gain from it. Meltzer and Richard (1981) present a model with flat taxes and per capita lump sum redistribution and show that when the median voter has income below the mean, candidates who support redistribution should win. However, as inequality has continued to rise over the past several decades, public support for redistribution has not risen with it. Scholars have offered a plethora of explanations for this empirical pattern in the American case. First, Americans may simply be unaware of the level of inequality that exists and therefore do not demand more redistribution (Bartels 2008; Norton and Ariely 2011). Some recent work has highlighted that prompting people to consider their lower social status can increase support for redistribution (Condon and Wichowsky 2020), though other work has shown that downward social comparison for people just above minimum wage reduces support for policies to remedy inequality (Kuziemko et al. 2014). Second, partisan and ideological beliefs affect support for redistribution (e.g. Esarey, Salmon, and Barrilleaux 2012; Lenz 2009). Third, people condition their willingness to redistribute on social preferences, like fairness, a taste for equality, and rewarding effort (e.g. Alesina and Angeletos 2005; Durante Putterman and van der Weele 2014; Fong 2001). These social preferences can also affect beliefs about deservingness (e.g. Petersen 2012; van Oorschot 2000). Finally, beliefs about redistribution are also contingent on beliefs about the race of beneficiaries (e.g. Gilens 1999). While this is not an exhaustive review of the literature explaining preferences for redistribution and social spending, it highlights a number of theoretical approaches and important empirical results in recent scholarship.

However, fewer explanations have been offered to explain tax preferences. How do Americans want to be taxed? Extant research shows that, for the most part, Americans support progressive taxation (Ballard Rosa, Martin, and Scheve 2016; Page and Jacobs 2009; Roberts, Hite, and Bradley 1994). Ballard Rosa, Martin, and Scheve (2016) used a conjoint experiment to assess income tax preferences across the entire tax schedule. Participants were randomly presented with tax plans that varied the rate of income tax across six income brackets. On average, participants selected plans that taxed the rich at a higher rate than the poor. Overall, Americans' observed income tax policy preferences were generally consistent with the current progressive income tax structure (Ballard Rosa, Martin, and Scheve 2016, pp. 14). While progressivity requires that taxes rates increase with income, it does not reveal what the tax rate should be for those at the bottom of the income distribution.

Scheve and Stasavage (2016) offer two fairness-based accounts for why people might prefer progressive taxation. The first is based on beliefs about the "ability to pay". The rich are taxed at higher rates than the poor because they can afford to contribute more to the tax burden. That is, it is fair that the rich give more because they have more. The second invokes a "compensatory argument" that suggests the rich pay more because they have been privileged in other ways by the state. Related work has demonstrated that inequity aversion might also help explain preferences for progressive taxation (Lu and Scheve 2016). But once again, whether progressive tax structures are fairer when the poor pay less or nothing at all is unclear. What do people believe is fair when then consider taxes not just up, but also down, the income distribution?[3]

[3] In a similar vein, other work has examined support for tax policy changes that substantially benefited wealthier individuals, like the repeal of the estate tax and the Bush tax cuts from the early 2000s (e.g., Bartels 2005). Providing information about who benefits from these policies had a large effect on preferences for the estate tax, but modest effects on preferences for increasing taxes on the top 1% of earners or millionaires (Kuziemko et al. 2015).

Other studies have examined preferences for taxing the rich at the state-level. Using survey data, Franko, Tolbert and Witko (2013) found that people reported that they voted (or intended to vote) in line with their economic self-interest on a relatively straightforward proposition in Washington State to increase taxes on the wealthy and use the new revenue for spending on "education and health" (pp. 927). Newman and Teten (2020) extended this work by examining survey respondents' reported level of support or intended vote choice for five state-level ballot measures and three legislative acts that targeted high income individuals with additional taxes. They also found support among low income respondents for increasing taxes on the rich for all eight policies. Seven of the eight questions used as dependent variables also specified how the money would be spent, which was primarily to finance education and healthcare. But these questions bundle taxing and spending changes, which makes it empirically difficult to separate out preferences for progressive taxation from preferences for progressive spending. Would citizens support more regressive taxation if it meant an increase in progressive social spending? Would marginal increases in taxing the poor alone increase support for further social spending? Boudreau and MacKenzie (2018) offer some suggestive evidence that at least some citizens would support greater taxation of the poor. In a survey experiment focusing on proposed tax increases in California, they found robust support among Democrats for a regressive sales tax increase to avert the need to cut $6 billion in funding for education. This suggests that citizens might not care only about minimizing the tax burden for the poor, but rather also about what their tax dollars are being spent on.

Research in the comparative political economy literature offers a more systematic treatment of the relationship between taxing and transfer systems. Beramendi and Rehm (2016) show that the welfare state is more contested when the combined tax and transfer system is more

progressive. Progressivity in the tax system places more burden on higher income citizens, while progressivity in the transfer system removes them from the pool of beneficiaries. Consequently, high earners have little incentive to support redistribution given that they are twice-punished by its design. Other work has shown that support for progressive taxation by average earners decreases as social expenditures directed solely to the poor increase (Berens and Gelepithis 2019). Put differently, progressive redistribution undermines support for progressive taxation. This suggests that citizens are concerned with whether or not the poor are adequately contributing to the financing of programs that they disproportionately benefit from.

As reviewed above, most of the existing literature on Americans' tax preferences focus on the level of taxation on the rich. So, what do we know about demand for taxing the poor in the United States? Using data from the American National Election Study, Bartels (2008) observed that approximately 89% of respondents believe that the poor pay about what they should or more than they should in federal income tax. However, the interpretation of this result is not straightforward as most low-income households earn less than the standard deduction, which means that they pay no federal income tax.[4] In a fully conjoint experiment, people disliked the poor paying a high rate of income tax (>10%), but they were equally likely to support a tax rate of 0% to 5% for workers earning less than $10,000 a year (Ballard Rosa, Martin, and Scheve 2016). Importantly, neither design clearly isolates what respondents believed about spending. Thus, it is not clear how Americans want the poor to be taxed especially when beliefs about spending can be sufficiently controlled.

The existing literature leaves open a number of important theoretical questions for understanding tax preferences. Does the observational data indicating that progressivity in

[4] https://www.taxpolicycenter.org/briefing-book/how-does-federal-tax-system-affect-low-income-households

taxation reduces support for progressivity in spending hold up in an experimental framework? Is the general preference among Americans for progressive taxation robust if the final distribution of outcomes is fixed? Or will Americans be more supportive of flat or regressive taxation if changing the distribution of taxes does not change the distribution of outcomes? More generally, will people care about how money is raised if distributional outcomes are unchanged? And finally, do people think that the poor should pay nothing in taxes, or just less than the rich?

A public goods theory of tax preferences

To motivate our empirical design, we propose that people think about tax provision as a public goods problem. That is, everyone is expected to contribute to government financing because everyone reaps the benefits of public expenditure. We are not arguing that all government spending produces non-excludable, non-rivalrous, public goods, but rather that people think, either consciously or unconsciously, about paying taxes as a contribution to produce a public good. Consequently, citizens might judge those who do not pay taxes as free riders. This could occur because the poor not paying taxes is withholding a contribution to a collective effort or because the poor are receiving benefits from the collective good without having contributed (Delton et al. 2012). We note that the notion that everyone should contribute to a public good for fairness reasons does not demand that everyone contribute the same amount, but rather that individuals contribute their "fair share." (Hofmeyr, Burns, and Visser 2007; Sugden 1984).[5]

A voluminous body of literature from psychology and behavioral economics has shown that free riders are targets of moralization and punishment (e.g. Delton et al. 2012; Fehr and

[5] We note that the definition of fair share used by the work cited here is the same percentage of their endowment, which is akin to a flat tax. As noted by Scheve and Stasavage (2016), there are a number of conceptions of fairness that make divergent predictions about what a fair share is. This could be a topic for additional research in public goods experiments.

Gachter 2000; Price, Tooby, and Cosmides 2002). In two experiments, Delton and colleagues (2012) show that free riders are judged as more deserving of punishment, less deserving of reward, more selfish, and less trustworthy than individuals who unintentionally did not contribute to a collective group effort.[6] Price, Tooby, and Cosmides (2002) argue that this moralization is targeted at people who do not contribute their fair share. They draw on evidence from experimental public goods games in which individuals were punished for contributing below mean levels for the group rather than for deviations from optimal contribution, which would maximize collective welfare (Fehr and Gachter 2000). Thus, people might calibrate their judgments about free riding based on beliefs about fairness to others rather than on what would maximize group welfare.

Concerns about free riding are central to the work on the deservingness of people who receive benefits from social programs (e.g. Fang and Huber 2019; Petersen 2012; van Oorschot 2000). Typically, studies on deservingness describe a specific individual who, for example, is or is not making an effort to find a job while receiving benefits. After this, participants are asked whether or not that individual should receive benefits. Individuals who are not making an effort to find a job alleviating their need for public assistance are judged as less deserving of benefits than those who are making an effort (Petersen 2012). Returning to work not only removes an individual from the welfare rolls, but also increases their contribution to taxes to finance the program. Other work has found that participants will decrease their support for a laboratory social insurance program when they observe a single instance of free riding and decreasing

[6] Of course, the poor are not intentionally withholding their contributions to the public good, but we have little reason to suspect that rules that force noncontribution are a relevant input for this psychology of public goods. Further, Fang and Huber (2019) show that beliefs about free riding in Social Security Disability Insurance are fairly prevalent in the absence of clear information about intentionality. This suggests that at least some people believe that considerable amounts of free riding occur when there is an absence of clear information.

benefits will reduce their tax burden (Bokemper, Fang, and Huber 2020). While this line of research generally helps understand how observing an instance of free riding affects support for welfare spending, it does not address whether macrolevel design features like requiring that the poor pay taxes can increase support for social spending.

In summary, we expect that: 1) people will rate policies that tax the poor as more fair than policies that do not, holding distributional outcomes constant[7], 2) people will be more likely to choose policies that tax the poor compared to those that do not, holding distributional outcomes constant, and 3) people will be less likely to support a politician who proposes the expansion of social programs, but exempts the poor from sharing the increased tax burden relative to a politician who would fund the expansion by taxing all citizens, including the poor.

The present experiments

To test this public goods theory of tax preferences, we conducted the four experiments summarized in Table 1. In the first two experiments, participants were placed in a society, assigned to a level of earnings, and then asked to evaluate a series of joint taxing and spending proposals, either presented individually (Experiment 1) or in pairs (Experiment 2). Our work builds on prior experimental work that considers the multidimensional nature of tax preferences (see Ballard Rosa, Martin, and Scheve 2016).[8] That is, we present individuals with different tax structures that vary taxes at different levels of income rather than condensing taxes to a single dimension (i.e. higher or lower or taxes for only a single group, like the rich).

[7] Here we mean "the poor" to include individuals who earn something, rather than those who are truly destitute. Obviously, one cannot collect (income) taxes from those with nothing, although efforts like poor houses (Katz 1996) asked those with nothing to instead contribute their effort.

[8] Unlike Ballard Rosa, Martin, and Scheve (2016), all of the tax schemes were present are at least weakly monotonically increasing in the dollar value of taxes paid with income. We nonetheless also include regressive tax policy options in experiment 2, where the proportion of income paid in taxes is decreasing with income.

Table 1: Summary of the Design of Four Experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Platform	Amazon Mechanical Turk	Amazon Mechanical Turk	Lucid	Lucid
Design	Mixed Design, Incentivized Experiment	Mixed Design, Incentivized Experiment	Between-Subjects, Political Rhetoric Experiment	Between-Subjects, Political Rhetoric Experiment
Dates	October 2019	December 2019	December 2019	January 2020
Size	N = 1,302	N = 1,992	N = 3,811	N = 2,506
Treatments	Taxing Policies, Spending Policies	Taxing Policies, Spending Policies, Earning Levels	Baseline, Baseline + Criticism, Poor Not Pay, Poor Not Pay + Criticism	Poor Not Pay Control, Poor Not Pay + Fairness Criticism, Poor Not Pay + General Criticism
Dependent Variables	Fairness to You, Fairness in General, Ordered Policy Ranking	Forced Choice between Pair of Policies, Fairness in General	Likelihood of Voting for Candidate, Fairness of Policy	Likelihood of Voting for Candidate, Fairness of Policy

We build on this prior work by specifying where people will end up in society after taxes are collected and spending occurs. Further, we employ incentivized experimental designs that place participants in a costly choice environment that affords us a behavioral measure of tax policy preferences. Importantly, this design gives us tight control of individual self-interest as a potential explanation for tax preferences. With one exception in Experiment 1, the tax structures that participants evaluated were chosen at random and orthogonal to outcomes, which solely determined how much money participants earned. Given this design feature, if participants were only motivated by self-interest (or the well-being of others), tax policy should be irrelevant because taxes have no direct effect on any participant's final earnings, which are independently assigned. Thus, we have a very conservative test of whether the poor paying taxes affects support

for policy because removing the poor from the tax rolls has no direct effect on the level or distribution of government spending.

These experimental designs offer a number of advantages for assessing the causal effect of the poor paying taxes on support for taxation. First, participants must make costly trade-offs between the distribution of tax burdens on society and the distribution of societal outcomes, with only the latter affecting material self-interest. That is, a desirable tax structure might be paired with less desirable outcomes and participants are forced to trade-off between what they believe is a more equitable distribution of taxes against a spending policy that adds to their earnings. Second, we assign people to their level of earnings in society, which eliminates potential confounds (e.g. effort or ability) that are correlated with an individual's actual status in the income distribution outside of the experimental setting.[9] Finally, because we vary both taxes and outcomes simultaneously, we separate how government revenue is raised from concerns about how it is spent (and where people end up after both taxes and spending). Past work focuses only on taxing or spending policy in isolation, but people may form beliefs about who pays for policy and who benefits from it when only information about the other dimension is presented, a violation of the exclusion restriction assumption that a manipulation of tax policy (spending policy) affects only tax (spending) relevant considerations.

At the same time, however, we are sensitive to issues of external validity that cannot be addressed with controlled incentivized experiments. For this reason, and because political conflict often takes place in an environment in which individuals make arguments, we examine whether rhetoric that argues that it is unfair to exempt the poor from the tax rolls causes people to become less supportive of political candidates who propose expansions of social programs

[9] Similarly, if a real effort task is used to assign income levels it risks creating a correlation between characteristics that explain task performance and realized income levels.

(Experiment 3 and Experiment 4). In these experiments, participants read about a primary election candidate who was proposing an expansion of social programs, like healthcare or education. Participants were randomly assigned to see the proposed policy and a criticism (or not) of the policy. One of the criticisms highlighted the unfairness of exempting the poor from paying taxes to help fund the expansion of social programs. In short, these political rhetoric experiments allow us to understand whether our public goods theory of taxation preferences leads to greater support for policy proposals in which everyone contributing to financing the program.

Experiment 1

Procedure and Design

We recruited participants from Amazon Mechanical Turk to participate in a decision-making study. [10] Participants received 50 cents for participating in the experiment and were told that they would also earn a bonus payment. During the study, participants earned tokens that were converted to cents at a rate of 100 tokens = 5 cents.

Participants read four taxing and spending proposals for a hypothetical society. This society had low earners, middle earners, and high earners who earned "tokens". Specifically, low earners made 550 tokens, middle earners made 750 tokens, and high earners made 950 tokens. All participants were assigned to be middle earners and they were fully informed about each group, each group's initial income, and the taxing and spending policies.

[10] We restricted participation in the study to individuals who lived in the United States and had at least a 98% approval rating on their previously completed tasks. The study was advertised as a "Decision Making Study". The samples for Experiment 1 and Experiment 2 had an average age 38 years old, 53% female, slightly left-leaning, and had some college education on average. This is largely consistent with what has bene observed in past research using Mturk.

Participants saw four taxing policies that were paired with final outcomes.[11] The tax policies, shown in Table 2, appeared in a randomized order, such that every participant saw all four tax policies. The tax policies vary how much low earners and high earners pay in taxes. We paired the taxing policies with a spending policy (shown in Table 3), which specified the final earnings for individuals at each income level (that is, for each group we presented the final income net of taxes and spending). We created a baseline condition that paired the *No Low Taxes* condition with final outcome A. The remaining three tax policies were randomly paired with any of the spending policies, selected at random with replacement. Participants could therefore see the same spending policy paired with different tax policies.

Table 2: Tax Policies. Experiment 1.

Tax Condition	Low Earners Taxes	Middle Earner Taxes	High Earner Taxes
No Low Taxes	0 tokens	70 tokens	120 tokens
Low Taxes	30 tokens	70 tokens	120 tokens
Low + More High Taxes	30 tokens	70 tokens	150 tokens
No Low + More High Taxes	0 tokens	70 tokens	150 tokens

Note: Sampled without replacement. No Low Taxes always paired with Final Outcome A.

Table 3: Final Earnings. Experiment 1.

Final Outcome Condition	Low Earners Final Outcome	Middle Earners Final Outcome	High Earners Final Outcome
A	600 tokens	750 tokens	900 tokens
B	650 tokens	750 tokens	900 tokens
C	650 tokens	800 tokens	900 tokens
D	700 tokens	800 tokens	900 tokens

Note: Sampled with replacement. Participants always saw Final Earnings Condition A at least once paired with "No Low Taxes" Tax Condition.

Experiment 1 began with participants reading and answering basic demographic questions. After this, participants learned about the initial income distribution in society and their place in it as middle earners. For the first policy, participants were initially shown the

[11] These were presented as bar charts with the raw value of earnings and taxes, see Appendix Figure A1.

distribution of taxes in society without the distribution of spending. They rated the fairness of the tax policy on two dimensions: 1) how fair the policy was to them, and 2) how fair the policy was in general.[12] This allowed us to isolate the effect of varying the taxes that low earners and high earners paid, irrespective of where they would subsequently end up after spending occurred (while acknowledging the possibility that individuals may have made inferences about where they would end up on the basis of taxes alone). After rating the fairness of the tax policy, participants saw the same taxing policy paired with a spending policy. They then rated the combined taxing and spending policy on both dimensions of fairness. After this, participants saw and rated three more taxing and spending policies, with these policies presented as bundles of taxes and spending together.

Finally, participants were asked to rank the policies that they saw from their most preferred policy to their least preferred policy. Prior to ranking the policies, participants were told that one participant's most preferred policy would be randomly chosen to be implemented and that the chosen policy would determine the bonus payment that each participant received. This gives us a behavioral measure of their policy preferences as each person's top ranked policy was equally likely to be chosen in expectation (i.e., each person's choice was potentially pivotal irrespective of others' choices).

Results

Table 4 displays regression estimates of the effect of tax and spending policy on participant's evaluations of fairness. We begin in Columns 1 and 2 by examining whether participants, who were all middle earners, were more supportive of tax policies that taxed low

[12] Prior to rating the policy, participants answered three comprehension questions to confirm they understood the figure that displayed initial income and taxes. Participants performed very well on the comprehension check (95% of participants got at least 5 of 6 questions correct) and all analyses do not condition on performance.

earners before they knew where they would end up after the spending policy was enacted. Middle earners believed that tax policies that made low earners pay taxes were about 5 points fairer to middle earners than policies that did not tax low earners ($p < .01$). Middle earners also rated policies that made high earners pay more taxes as 5 points fairer than when the rich paid the baseline rate ($p < .01$; Column 1). Effects for ratings of fairness in general appear in Column 2. Participants rated policies that had low earners pay taxes as 6 points ($p < .01$) fairer than those in which low earners did not pay taxes, but there was no effect of high earners paying more taxes on participants' ratings of fairness in general (Column 2).

Next, we examine whether participants continued to rate policies in which low earners paid taxes as fairer when they also knew how government spending would change the final distribution of income. For the first taxing and spending policy that was displayed, we observe that the effect of low earners paying taxes is in the hypothesized direction for both fairness to you and fairness in general, though neither effect is statistically significant (Column 3 and Column 4). We note that because subjects had already been asked (separately) their evaluation of the fairness of the tax policy in this scenario, it is not clear if participants were focusing on spending alone when answering these items.

When we instead examine all four policies that participants rated when both taxes and spending were presented together, we find a positive and significant effect of low earners paying taxes on both measures of fairness. Participants rate policies in which low earners pay taxes as 3 points ($p < .01$) fairer to them as middle earners and 4 points ($p < .01$) fairer in general (Columns 5 and 6). The effect of low earners paying taxes was slightly larger for both measures of fairness when we analyzed only the second, third, and fourth policy that participants saw (e.g., those where taxing and spending were presented simultaneously, Columns 7 and 8).

Table 4: Participants rated policies that taxed the poor as fairer than policies that did not. Experiment 1.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	First Scenario, Just taxes, Fairness taxes to you (0-1)	First Scenario, Just taxes, Fairness taxes in general (0-1)	First Scenario, With outcome, Fairness policy to you (0-1)	First Scenario, With outcome, Fairness policy in general (0-1)	All Scenarios, With outcome, Fairness policy to you (0-1)	All Scenarios, With outcome, Fairness policy in general (0-1)	Scenarios 2-4, With outcome, Fairness policy to you (0-1)	Scenarios 2-4, With outcome, Fairness policy in general (0-1)
Low pay any taxes (1=yes)	0.054	0.058	0.022	0.016	0.026	0.038	0.031	0.044
	[0.015]***	[0.016]***	[0.016]	[0.017]	[0.005]***	[0.006]***	[0.006]***	[0.007]***
High pay more taxes (1=yes)	0.049	0.020	0.014	-0.001	0.002	-0.002	0.005	-0.003
	[0.015]***	[0.016]	[0.016]	[0.017]	[0.005]	[0.005]	[0.006]	[0.006]
Final outcome: (B) Low 650 Mid 750			-0.053	-0.065	-0.016	-0.028	-0.019	-0.025
			[0.024]**	[0.026]**	[0.007]**	[0.008]***	[0.009]**	[0.010]**
Final outcome: (C) Low 650 Mid 800			0.004	-0.025	0.067	0.021	0.063	0.019
			[0.021]	[0.023]	[0.009]***	[0.009]**	[0.010]***	[0.010]*
Final outcome: (D) Low 700 Mid 800			-0.014	-0.013	0.032	-0.013	0.035	-0.017
			[0.022]	[0.023]	[0.009]***	[0.009]	[0.010]***	[0.011]
Displayed 2nd					-0.014	-0.018	-0.007	0.003
					[0.006]**	[0.006]***	[0.006]	[0.007]
Displayed 3rd					-0.015	-0.027	-0.008	-0.005
					[0.007]**	[0.007]***	[0.006]	[0.006]
Displayed 4th					-0.007	-0.022		
					[0.007]	[0.007]***		
Constant	0.620	0.631	0.683	0.651	0.660	0.626	0.649	0.601
	[0.013]***	[0.014]***	[0.014]***	[0.014]***	[0.005]***	[0.005]***	[0.005]***	[0.006]***
Observations	1302	1302	1302	1302	5208	5208	3906	3906
Number of Respondents					1302	1302	1302	1302
R-squared	0.020	0.012	0.006	0.006	0.049	0.027	0.056	0.028
Sample Mean of DV	0.670	0.670	0.690	0.640	0.680	0.620	0.680	0.620
Sample SD of DV	0.270	0.280	0.280	0.290	0.280	0.290	0.280	0.300

Note: Omitted tax policy is (1) 0/70/120 and omitted outcome is (A) Low 600 Mid 750. OLS Coefficients with robust standard errors in columns 1-4 and fixed effects OLS regression coefficients with robust standard errors clustered at respondent level in columns 5-8.

* significant at 10%; ** significant at 5%; *** significant at 1%

Finally, we turn to participants' rankings of the taxing and spending policies. As noted above, each participant's top ranked policy was eligible to be randomly selected to determine bonus payments. Our analysis of participants' rankings, shown in Table 5, includes models that predict where an individual ranked a policy and also whether they ranked a policy as their top choice. Policies that required low earners to pay taxes scored about .13 ranks better ($p < .01$) than those that exempted low earners from taxes, controlling for the amount the high paid and final outcomes (Column 1). Policies that taxed low earners were also 4 points more likely to be ranked as the most preferred policy ($p < .01$; Column 2).

Because we chose to sample final outcomes with replacement, some participants saw the same final outcome with two different tax policies: one in which low earners paid taxes and one in which low earners did not. This holds constant distributional considerations and allows us to leverage the variation in low earners paying taxes. Restricting attention to participants who saw two different tax policies with the same final outcome, the effect of low earners paying taxes was a .16 rank ($p < .01$) decrease in average rank and an 8 point ($p < .01$) increase in the probability that the policy was most preferred (Columns 3 and 4). When we relax this restriction to also include observations from participants who saw the same outcome more than two times, these effects decrease slightly to 12 percent ($p < .01$) and 6 points ($p < .01$) respectively (Columns 5 and 6). These results show a clear causal effect that low earners paying taxes increases evaluations of the fairness of a tax and spending policy.

Discussion

Taken together, these results support a public goods theory of tax preferences. Without knowing where they would end up after government spending, participants rated tax policies as fairer, both to themselves as middle earners and in general, when low earners paid taxes. Middle

earners continued to rate these same policies as fairer even after they learned about how government spending would change the distribution of income. Further participants were more likely to rank policies that taxed low earners as their most preferred (and as more preferred in general) controlling for final outcomes, which, in expectation, determined payment for the experiment. Thus, people are more supportive of taxing and spending policies when everyone is asked to shoulder some of the burden.

Table 5. Policies that tax low earners are ranked more favorably (lower) and more likely to be the most preferred policy. Experiment 1.

	(1)	(2)	(3)	(4)	(5)	(6)
	All scenarios, Rank of policy (1-4, 1=Best)	All scenarios, Most preferred policy (1=yes)	Paired Fixed Outcomes with Variation in Poor Pay, Rank of policy (1-4, 1=Best)	Paired Fixed Outcomes with Variation in Poor Pay, Most preferred policy (1=yes)	Fixed Outcomes with Variation in Poor Pay, Rank of policy (1-4, 1=Best)	Fixed Outcomes with Variation in Poor Pay, Most preferred policy (1=yes)
Low pay any taxes (1=yes)	-0.126	0.043	-0.157	0.083	-0.124	0.064
	[0.041]***	[0.015]***	[0.057]***	[0.036]**	[0.051]**	[0.029]**
High pay more taxes (1=yes)	0.009	-0.022	0.092	-0.090	-0.006	-0.036
	[0.036]	[0.015]	[0.083]	[0.052]*	[0.060]	[0.034]
Final outcome: (B) Low 650 Mid 750	-0.175	-0.019				
	[0.059]***	[0.021]				
Final outcome: (C) Low 650 Mid 800	-1.000	0.308				
	[0.059]***	[0.024]***				
Final outcome: (D) Low 700 Mid 800	-0.893	0.304				
	[0.063]***	[0.025]***				
Displayed 2nd	-0.082	0.004	-0.017	0.028	-0.054	0.023
	[0.046]*	[0.018]	[0.098]	[0.063]	[0.079]	[0.044]
Displayed 3rd	-0.167	0.038	-0.085	0.048	-0.065	0.023
	[0.048]***	[0.019]**	[0.101]	[0.063]	[0.080]	[0.045]
Displayed 4th	-0.013	-0.009	0.042	0.014	0.025	0.001
	[0.048]	[0.018]	[0.095]	[0.061]	[0.076]	[0.044]
Constant	3.013	0.120	2.608	0.483	2.665	0.413
	[0.038]***	[0.014]***	[0.075]***	[0.048]***	[0.061]***	[0.035]***
Observations	5204	5204	1500	1500	2292	2292
Number of Respondents	1302	1302				
Number of Low tax comparison groups			750	750	1006	1006
R-squared	0.143	0.105	0.014	0.011	0.006	0.005
Sample Mean of DV	2.500	0.250				
Sample SD of DV	1.120	0.430				

Note: Omitted tax policy is (1) 0/70/120 and omitted outcome is (A) Low 600 Mid 750. OLS Coefficients with robust standard errors in columns 1-2 and fixed effects OLS regression coefficients with robust standard errors clustered at respondent level in columns 3-6.
* significant at 10%; ** significant at 5%; *** significant at 1%

Experiment 2

Experiment 2 builds upon the results of Experiment 1 to demonstrate robustness and consider additional types of taxing arrangements. Most significantly, in Experiment 1 all participants were assigned to be middle earners in a society with three levels of income. Although this held constant their position in society, it also created situations in which changes in low earners' taxes or final outcomes may have been particularly salient given the close proximity of these low earners to middle earners in the income distribution. To eliminate the possibility that the results were driven by concern over relative standing, we implemented five income levels in Experiment 2, such that some participants could be randomly assigned to income levels that were not proximate to low earners.

Procedure and Design

Participants were assigned to an initial income level: low (500 tokens), low-middle (700 tokens), middle (900 tokens), middle-high (1,100 tokens), or high (1,500 tokens).[13] We randomly assigned participants to low-middle, middle, or middle-high levels of income. Notably, middle and middle-high earners have at least one group separating them from low earners, which likely shifts the reference point for their own taxes and final outcomes away from that of low earners.

We employed a forced-choice design in which participants saw four contests between two paired taxing and spending policies and were asked to select the policy that they preferred. Similar to Experiment 1, participants saw all taxing policies (see Table 6) in a random order. Policy 1 serves as a baseline condition for our subsequent analyses. This progressive policy does not tax low or low-middle earners. We also included three other progressive tax plans: one that

[13] The recruitment of participants was the same as described in Experiment 1. As with Experiment 1, participants performed very well on the comprehension check (91% answered 11 or more of 12 questions correctly). Thus, we again do not condition our analyses on performance.

taxed all earners except low earners (Policy 2), one that taxed all earners with low and low-middle earners paying one-third and two-thirds of what middle earners pay respectively (Policy 3), and one with low earners and low-middle earners paying one-sixth and one-half of what middle earners pay respectively (Policy 4). Importantly, for all four progressive tax policies, the tax burdens of the middle, middle-high, and high earners were fixed. We also included two flat percentage tax policies that varied taxes on low earners (Policy 5 and Policy 6) and two regressive tax policies (Policy 7 and Policy 8). Total tax revenue was constrained between 800 and 1,000 tokens. The taxing policies were randomly paired with final outcomes (see Table 7). These outcomes varied in the amount and target of redistribution that occurred and all policies were Pareto improving.[14]

Table 6: Tax Policies by Earner. Experiment 2.

Tax Policy Number	Tax Regime	Low Earner	Low-Mid Earner	Middle Earner	High-Mid Earner	High-Earner
1	Progressive	0	0	150	250	400
2	Progressive	0	100	150	250	400
3	Progressive	50	100	150	250	400
4	Progressive	25	75	150	250	400
5	Flat	0	140	180	220	300
6	Flat	100	140	180	220	300
7	Regressive	0	200	200	200	200
8	Regressive	200	200	200	200	200

Note: All values are denominated in tokens. The policies were sampled without replacement.

[14] Selecting Pareto-improving policies means we do not account for deadweight loss or a budget-balancing constraint in which tax revenue must match spending (e.g. Meltzer and Richard 1981). Instead, we assume that at least some government spending produces value greater than its tax input (e.g. public goods).

Table 7: Final Outcomes. Experiment 2.

Policy	Low Earner	Low-Mid Earner	Middle Earner	High-Mid Earner	High-Earner
A	550	750	900	1,100	1,400
B	600	750	900	1,100	1,350
C	600	750	950	1,100	1,350
D	650	800	950	1,150	1,350
E	550	750	950	1,150	1,350
F	650	800	950	1,150	1,350

Note: All values are denominated in tokens. The outcomes were sampled with replacement.

Participants were informed that one randomly selected choice from one randomly selected participant would be implemented. As with Experiment 1, participants were paid based on the final outcome of the selected policy, making each binary decision a costly behavioral choice in expectation.

We note that, as with Experiment 1, the distribution of tax burdens had no direct effect on earnings, which biases against finding an effect of tax policy alone on preferences. After making their choice in each contest, participants also rated the general fairness of each policy on a seven-point scale ranging from very unfair to very fair.[15]

Results

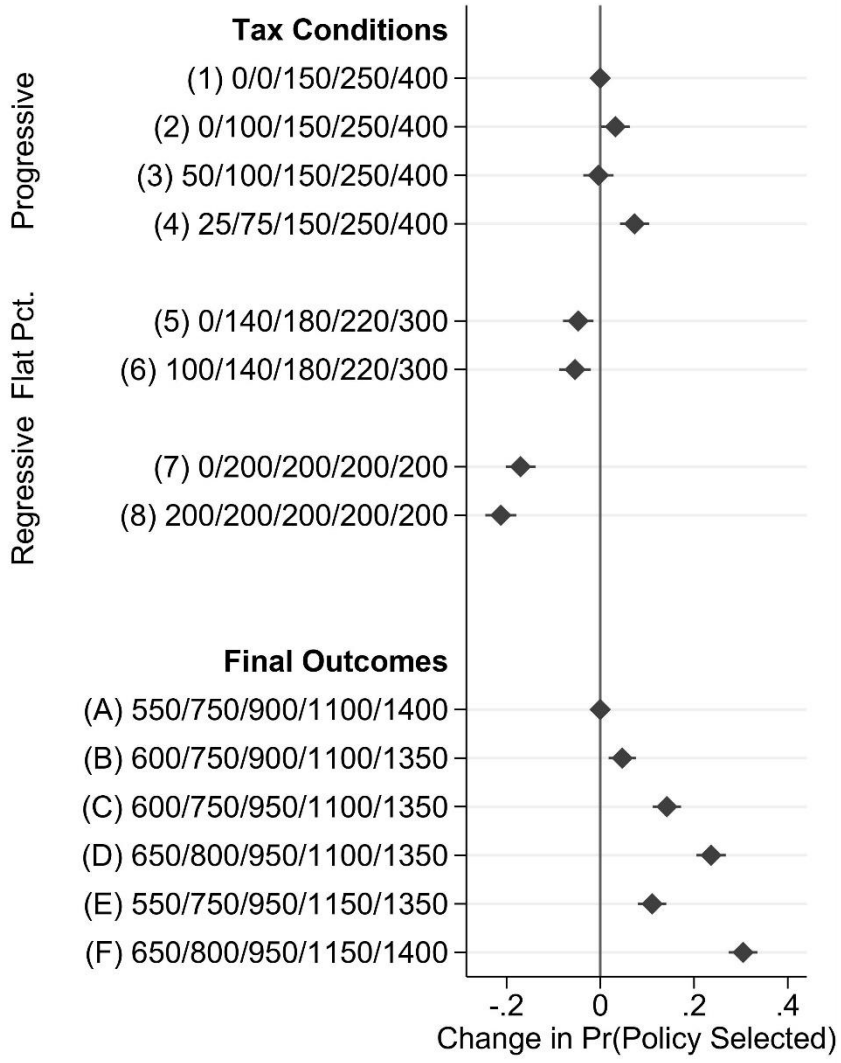
First, we examine participants' choices in the four contests between policies. To do so, we regressed whether a particular policy was chosen (0 or 1) on a set of dummy variables for each tax policy, each final outcome, and the order that participants saw policies in. This produces the average marginal component effect (AMCE), which is the change in the probability that a plan was selected (Hainmueller et al. 2014). We also include fixed effects and clustered standard errors at the participant level to account for each participant making several choices.[16]

[15] Fairness to you and general fairness were strongly correlated in Experiment 1 and both were significant predictors of the policy that was chosen as most preferred. However, general fairness also significantly predicted policy ranking, so we used that measure in Experiment 2.

[16] We report full results from the analysis of participants' choices in the pairwise contests in Appendix Table A1.

Figure 1 displays the estimates (AMCE) of each tax and spending policy compared to a baseline condition that did not tax low earners or mid-low earners (Policy 1) and provided minimal redistribution (Final Outcome A) on the probability of choosing a policy that included that feature.

Figure 1. Participants were more likely to select policies that taxed low and low-middle earners. Experiment 2.



Pooling across all earners, we find that compared to the baseline tax policy, participants were 3.2% (p <.05) more likely to choose Policy 2, which taxed low-middle earners, but not low earners. They were also 7.3% (p < .01) more likely to choose Policy 4 that taxed low earners at a

5% rate and low-middle earners at an 11% rate compared to the omitted category which did not tax either group. In fact, Policy 4 that taxed all earners was more likely to be chosen than Policy 2 that still excluded low earners from the tax rolls (*diff*= 0.041, $p < .01$).

However, we do not observe that taxing earners in the lower end of the distribution always increases support. Participants were no more or less likely to choose Policy 3 compared to the baseline condition even though both low and low-middle earners paid taxes. This policy was considerably less progressive than Policy 4 as it doubled the tax rate on the low earner (10% vs. 5%). Thus, while we find strong evidence that people more favorably evaluate tax policies that place some tax burden on low earners, we also observe that people are not insensitive to the relative size of that burden.

This general concern for tax progressivity is apparent when we examine support for flat tax policies and regressive tax policies. Compared to Policy 1, our baseline condition, flat and regressive tax policies were considerably less likely to be chosen (approximately 5% less likely for flat policies, Policy 5 and Policy 6, and 17-21% less likely for regressive policies, Policy 7 and Policy 8). Further, focusing on comparisons within these types of tax regimes, having low earners pay taxes did not increase support for taxation. These results are in line with past research that has shown that Americans generally have progressive tax policy preferences (Ballard Rosa, Martin, and Scheve 2016). However, our earlier results show that opposition to regressive and flat tax regimes does not mean that respondents do not want the poor to pay taxes. Rather, they want the poor to pay something, just not too much.

How did a participant's earnings level influence their tax policy preference? Figure 2 shows the same regression model described earlier estimated separately for low-middle earners, middle earners, and high-middle earners. As can be seen in the figure, low-middle earners were

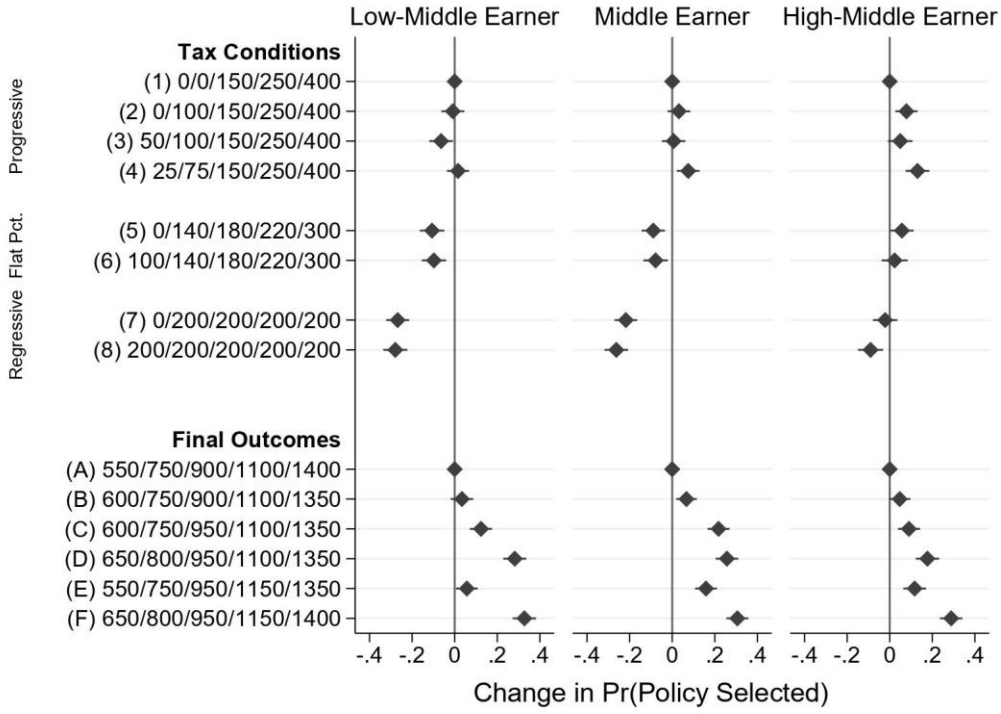
relatively unmoved by changes in tax progressivity and low earners paying taxes. In fact, low-middle earners were 6.4% (p <.05) less likely to select Policy 3 that placed a 100-token burden on them and 50-token burden on low earners relative to the control condition where they did not pay taxes. Importantly, low-middle earners would personally have to pay more taxes in each progressive policy relative to the baseline, so their lack of support may be explained by an aversion to paying taxes.

By contrast, middle and high-middle earners taxes were unaffected by changes among the progressive tax policies. Both middle and high-middle earners were considerably more likely to choose Policy 4 relative to the control at 7.5% and 13% ($p < .01$ in both cases), respectively. High-middle earners were also more likely to choose Policy 2 (7.8%, $p < .01$), and Policy 3 (4.9%, $p < .10$) which required earners below the middle income group to pay taxes. Support for tax policies among high-middle earners provides a clear causal effect of low earners paying taxes given that the taxes on middle earners and high earners are held constant across comparisons, eliminating concerns about the relative tax burden placed on proximate groups.

We further isolate the causal effect of low earners paying taxes on support for taxing by examining the difference in the probability of choosing between Policy 2 and Policy 4. These two policies produce identical tax revenue, but Policy 2 exempted low earners from paying while Policy 4 places a small tax burden on them (and reduced by that amount the burden on low-middle earners). We identified participants who saw Policy 2 paired against Policy 4 in the same contest, which allows for a direct test of the effect of low earners paying taxes. For these participants, we regressed their choice in this contest on a binary indicator for Policy 4 with controls for final outcomes and policy ordering. We also included fixed effects and clustered standard errors at the participant-level (see Appendix Table A1, Columns 6 and 7 for full

results). Thus, the effect of the Policy 4 indicator variable is the change in the probability that Policy 4 was chosen instead of Policy 2 in a specific contest, after accounting for final outcomes. Policy 4 was approximately 9.5% (p = .11) more likely to be chosen when paired opposite Policy 2 for all earners. Due to the loss in sample size, this effect was not statistically significant at a 5% level. The effect was similar (9.8%, p = .19) in magnitude when low-middle earners were omitted (reducing our sample size even further), however, which helps rules out that the effect is driven by low-middle who want a lower tax burden for themselves. Although these estimates are not statistically significant at conventional levels, they are a tightly controlled causal estimate of the effect of adding low earners to the tax rolls. This provides suggestive evidence that in a direct contest between a tax policy that taxes low earners and one that does not, voters prefer the policy that requires everyone to contribute.

Figure 2. High-middle and middle earners were more likely to choose tax policies that made low-middle and low earners pay taxes



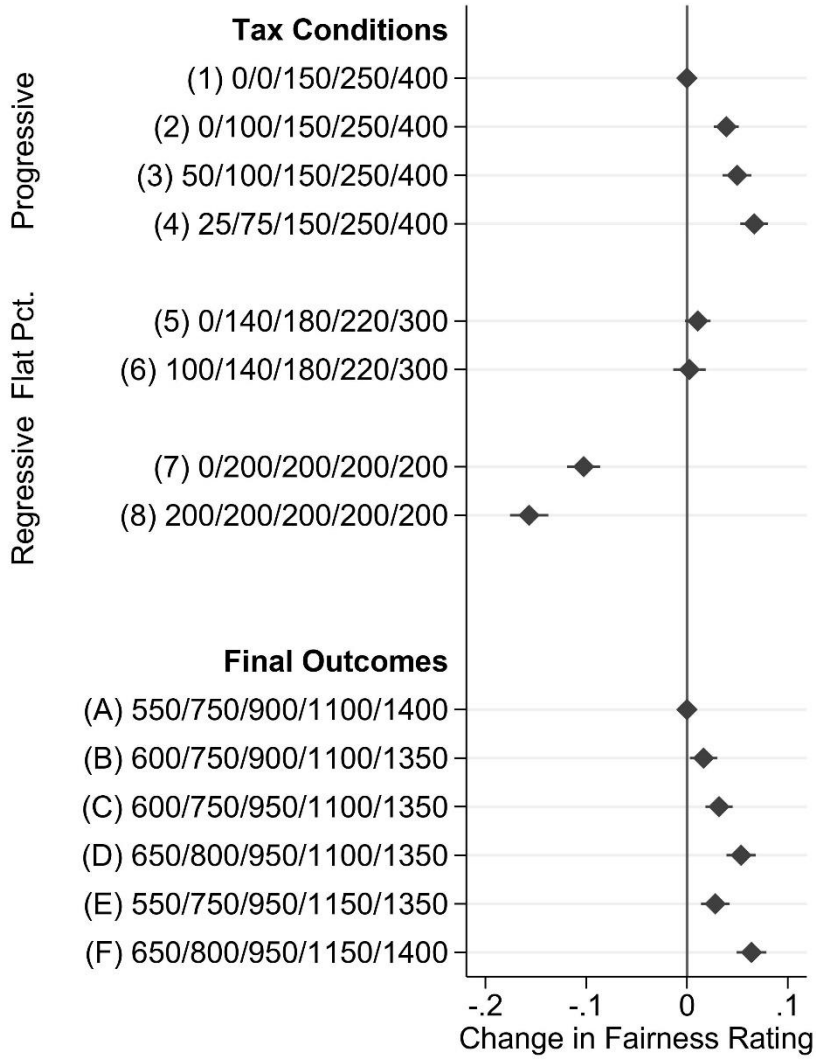
Last, we examine how low earners paying taxes changed participants' ratings of policy fairness. Figure 3 shows the ACME of each tax policy condition and final outcome.[17] Pooling across all earners, participants rated all three progressive tax policies that placed some burden on low-middle and low earners as fairer than the control policy that did not tax either group. Specifically, Policy 2 that taxed low-middle earners, but not low earners, was rated as 4.1 points ($p < .01$) fairer than the baseline policy. Policy 2 and Policy 3 that taxed all groups below the middle earners were rated as 5.2 points ($p < .01$) and 7 points ($p < .01$) fairer, respectively, than the baseline condition. Notably, the flat tax rate policies were viewed as no more or less fair than the baseline condition, while participants viewed the regressive tax policies as the most unfair. These results remain unchanged when middle-low earners are excluded from the analysis. Overall, the fairness ratings are broadly consistent with the results of the forced-choice experiment. Assuming baseline taxes are progressive, participants are more favorable toward and view as fairer those policies that impose some, but not too much, of a tax burden on the poor.

How did economic standing shape beliefs about the fairness of requiring that below-median earners pay taxes? Low-middle earners, a group that was not taxed in the baseline condition, still rated three other progressive tax policies as fairer than the baseline condition, even though they bore an increased tax burden. In fact, low-middle earners ratings of fairness look almost identical to those of middle earners whose tax burden was unchanged in all of the progressive policies. This increases our confidence that low-middle earners ratings of Policy 4 as the most fair are not solely driven by the fact it is also the progressive policy that requires them to pay the least in taxes. Shifting focus to high-middle earners, the effect of low and low-middle earners paying taxes was qualitatively larger than for middle and low-middle earners and the

[17] We estimated the same model described for participant's choices of each policy with participants' ratings of fairness recoded to range from 0 to 1. Full results are reported in Appendix Table A2.

pattern of relative preferences across policies was mostly unchanged. Taken together, these results support the theoretical account that taxation is more popular when the burden is placed on all earners.

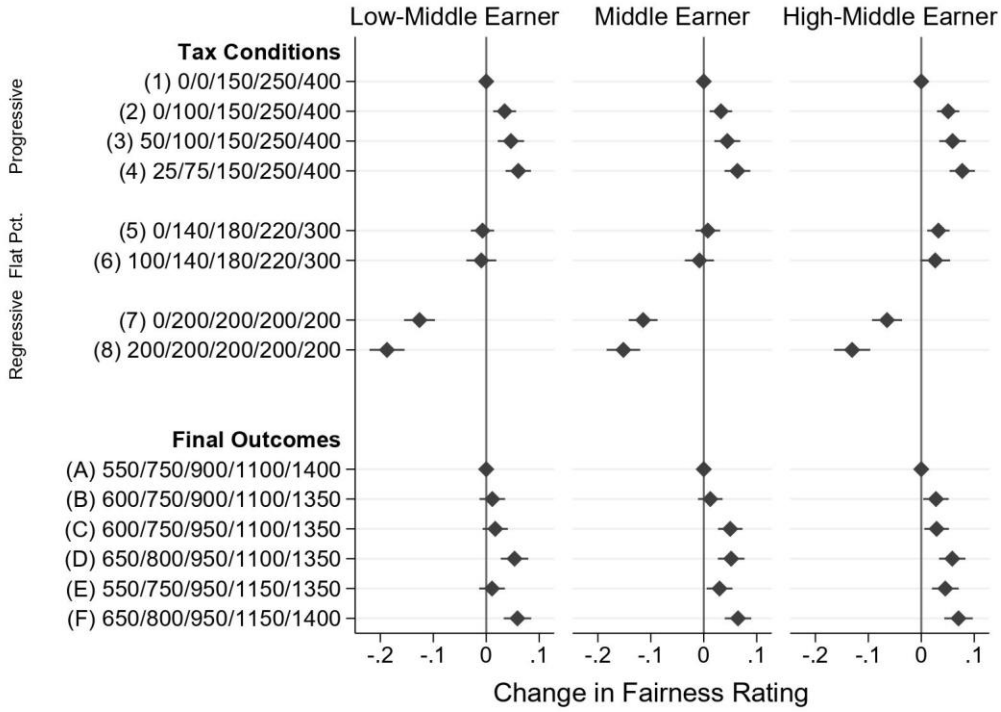
Figure 3. Policies that tax all earners are rated as fairer than the baseline policy. Experiment 2.



As with our analysis of participants' choices, we identified participants who saw Policy 2 paired against Policy 4 in the same contest. Again, these policies have constant tax revenue, but Policy 4 taxes low earners and Policy 2 does not. For all earners who saw the policies in the

same contest, Policy 4 was rated as 7.5 points ($p < .01$) fairer than Policy 2. When low-middle earners were omitted this effect increased slightly to 8.6 points ($p < .01$), which again indicates that the results are not driven by low-middle earners desire to pay lower taxes. This shows the strong causal evidence in support that people think about taxation as a public goods problem.

Figure 4: All earners rated policies that taxed below median earners as fairer than the baseline condition. Experiment 2.



Discussion

The results of Experiment 2 provide additional support for a public goods theory of tax preferences. Participants were more likely to choose policies that taxed low and low-middle earners. This occurred even though participants' payoffs were solely driven by the final outcome, which was manipulated independently of the tax policy. This effect was driven, in large part, by the preferences of middle and high-middle earners whose taxes were held constant across the varying progressive tax policies. Importantly, Policy 4 was the most likely to be chosen, which

placed less of a tax burden on below-median earners than Policy 3. This result suggests that middle and high-middle earners are not solely driven by a desire to maximize the taxes that are paid by other income groups. Turning to beliefs about fairness, participants rated all of the progressive policies as fairer than the baseline condition. Beliefs about fairness were less dependent on an individual's own economic standing. All earners, on average, believed that progressive policies that required below-middle earners to pay taxes were fairer than the baseline policy that did not tax the bottom two income groups in society.

Experiment 3

Thus far, we have shown in carefully controlled, incentivized experiments that people prefer progressive tax policies that require lower income earners to pay taxes compared to progressive policies that remove lower income earners from the tax rolls. These experiments prioritized internal validity, i.e. cleanly identifying an individual's economic standing, tax burden, and final outcomes after government spending, over external validity, i.e. generalizing to choice contexts like voting in elections where politician make competing claims about the merits of programs financed in different ways.

Now, we shift our focus to examining how voters evaluate a politician who wants to fund the expansion of social programs by either taxing everyone or taxing all but the poor. Specifically, we investigate whether this politician being criticized on the basis proposing to exempt the poor from paying taxes to finance progressive social programs undercuts support for that politician.

Procedure and Design

We recruited participants using Lucid, a third-party survey company. As with any opt-in sample, there are potential issues of generalizability to the population. Lucid samples have been

shown to be younger, more left-leaning, and lower socioeconomic status compared to the sample used in the American National Election Study (Coppock and McClellan 2019). Self-interested considerations are likely to lead a lower income sample to respond more favorably to policy that exempts them from a tax increase. However, this provides a particularly tough test of the causal effect of criticizing financing social programs without requiring that the poor also contribute to the tax pool.

Participants read a vignette about a candidate for the U.S. House who was campaigning on expanding government programs. The common content for the vignettes read:

> With the 2020 election approaching, candidates for open seats in the U.S. House have started to emerge. Some candidates have started talking about the issues they will emphasize if they are elected.
>
> In one district, a potential candidate has started talking about expanding government programs "that benefit all Americans," like improved Medicare, subsidies to colleges and universities to reduce tuition costs across the board, and paid family leave programs for mothers and fathers of newborn children. It is estimated that these programs would increase government spending by about 0.2% per year.

We randomly assigned participants to read one of four financing and criticism proposals, detailed below.

1) **Baseline**: To finance these programs without expanding the deficit, this candidate proposes increasing the taxes that every American pays. People who earn more money would see their taxes go up by a large dollar amount.
2) **Baseline + Criticism**: (Added to the text from Baseline) Another likely candidate has criticized this effort to increase government spending. "We don't need to take more

money out of people's pockets and give it to the government. Funding the program in this way simply isn't fair. Wealthy people already pay much more in taxes than lower income people."

3) **Poor Not Pay**: To finance these programs without expanding the deficit, this candidate proposes increasing the taxes middle class and wealthy Americans pay. High-income people would see their taxes go up by the largest dollar amount. Families earning less than $50,000 would not pay any additional taxes under this proposal.
4) **Poor Not Pay + Criticism**: (Added to the text from Poor Not Pay) Another likely candidate has criticized this effort to increase government spending. "We don't need to take more money out of people's pockets and give it to the government. Funding the program in this way simply isn't fair. Wealthy people already pay much more in taxes than lower income people and everyone who benefits from these programs should help contribute to paying for them."

After reading the full vignette, participants reported how likely they would be to vote for the candidate advocating the policy proposal, on a 7-point scale ranging from very unlikely to very likely, and how fair, in general, that they thought the policy proposal was, on a 7-point scale ranging from very unfair to very fair. For the analyses presented below we rescaled both variables to range from 0 to 1, with higher values indicating more favorable views.

Results

Table 8 reports the results of regression models predicting participant's support for the candidate and beliefs about the fairness of the policy. Participants in the Poor Not Pay condition were 5.1% ($p < .01$) more likely to vote for the candidate compared to the baseline condition. Recall that our sample was generally lower income (63% of participants reported income of less

than $50,000), which suggests that this policy was more popular than the baseline due to self-interest considerations. However, participants who saw the candidate criticized for not increasing taxes on the poor to finance the expansion of programs were only 2.6% more likely to vote for the candidate, though this effect did not reach the conventional 5% level ($p = .07$). A test of the difference in these coefficients shows that participants were 2.5% less likely to support the proposal to not increase taxes on the poor when it was criticize compared to when it was not ($p = .07$). Criticism of funding the programs by increasing taxes on everyone did not cause participants to be less supportive of the candidate (Table 8, Column 1). When controlling for relatively standard covariates, these effects are qualitatively similar, though the comparison of the Poor Not Pay condition and the Poor Not Pay + Criticism condition is now statistically significant (2.8%, $p < .05$; Table 8, Column 1). These results demonstrate that criticizing politicians for not requiring everyone to pay their fair share to expand social programs can be an effective strategy in undermining support.

How did the criticism of exempting the poor from a tax increase affect individuals' judgment about the fairness of the policy? The Poor Not Pay policy was rated as 2.3% ($p < .05$) fairer than the baseline policy. However, when this policy was criticized as being unfair, the policy was rated as no more or less fair than the baseline policy. In comparing the coefficients of the Poor Not Pay condition with the Poor Not Pay + Criticism condition, participants believed that the same policy was significantly less fair when it was criticized for not increasing taxes on the poor ($p <.05$; Table 8, Column 3). When covariates were included in the model, this effect remains largely unchanged, although the criticism of the baseline policy is now statistically significant when compared to the baseline condition (Table 8, Column 4). This criticism effect is similar in magnitude to the effect of criticizing the policy for the poor not paying taxes. Taken

together, these results suggest that charges of unfairness in the financing of expanding social programs can be effective in undermining people's beliefs about the fairness of the programs. However, we observe that this type of criticism only undermined support for a candidate when it highlighted that the poor were not contributing.

Table 8. Participants reported being less likely to vote for a candidate who was criticized for not increases taxes on the poor compared to a candidate who was not criticized. Experiment 3.

	(1)	(2)	(3)	(4)
	Likelihood of Voting for Candidate (0-1)	Likelihood of Voting for Candidate (0-1)	Fairness of Policy (0-1)	Fairness of Policy (0-1)
Baseline + Criticism	-0.006	-0.012	-0.019	-0.026
	[0.014]	[0.013]	[0.013]	[0.013]**
Poor Not Pay	0.051	0.047	0.026	0.023
	[0.014]***	[0.013]***	[0.013]**	[0.012]*
Poor Not Pay + Criticism	0.026	0.019	0.000	-0.005
	[0.014]*	[0.013]	[0.013]	[0.012]
$25,000 to $49,999		-0.009		-0.006
		[0.012]		[0.011]
$50,000 to $74,999		-0.028		-0.018
		[0.015]*		[0.014]
$75,000 and above		-0.031		-0.027
		[0.015]**		[0.014]*
Age in years		-0.001		-0.001
		[0.000]***		[0.000]**
Female		-0.022		-0.030
		[0.009]**		[0.009]***
Education (1-8)		0.010		0.009
		[0.003]***		[0.003]***
Strong Democrat		0.193		0.172
		[0.014]***		[0.013]***
Democrat		0.095		0.068
		[0.015]***		[0.014]***
Democrat Lean		0.090		0.072
		[0.018]***		[0.017]***
Republican Lean		-0.092		-0.099
		[0.021]***		[0.020]***
Republican		-0.032		-0.037
		[0.018]*		[0.017]**
Strong Republican		-0.059		-0.073
		[0.017]***		[0.016]***
Constant	0.539	0.534	0.563	0.549
	[0.010]***	[0.020]***	[0.010]***	[0.019]***
Observations	3811	3786	3807	3782
R-squared	0.005	0.125	0.003	0.120
Sample Mean of DV	0.560	0.560	0.560	0.560
Sample SD of DV	0.310	0.310	0.290	0.290

Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. The baseline condition is the excluded category.

Discussion

Experiment 3 shows that politicians who were criticized as being unfair by not requiring the poor to pay taxes received less support than those who were not criticized. Moreover, individuals' beliefs about the fairness of the policy also changed when they read a criticism that made salient the fact that the poor were not contributing. More generally, we observe that criticism of how social policy is financed undermine beliefs about the fairness of the policy.

Experiment 4

Procedure and Design

In this last experiment, we examined whether or not criticizing the fairness of exempting the poor from paying taxes decreased political support for a policy that did not tax the poor compared to a general fairness criticism of a policy that taxed everyone. In this experiment we instead focus only on a policy that exempted the poor from paying and test specifically whether focusing on the unfairness of not taxing the poor reduces support compared to a more general criticism. This comparison therefore provides a direct test of the relative efficacy of general versus tax fairness-based criticism.

As with Experiment 3, we recruited participants through Lucid to participate in the study. The common content across conditions was nearly identical to that from Experiment 3. Participants were then randomly assigned to read one of three vignettes:

1) **Control Condition**: To finance these programs without expanding the deficit, this candidate proposes increasing the taxes middle class and wealthy Americans pay. High-income people would see their taxes go up by the largest dollar amount. Families earning less than $35,000 would not pay any additional taxes under this proposal.

2) **Control + Fairness Criticism**: (Added to the text from Control) Another likely candidate has criticized this effort to increase government spending. "This is just another effort to take from those who pay taxes to benefit those who do not. Funding the program in this way simply isn't fair. Everyone who benefits from these programs should help contribute to paying for them."
3) **Control + General Criticism**: (Added to the text from Control) Another likely candidate has criticized this effort to increase government spending. "We don't need to give more money to the government for wasteful and badly run government programs. These policies will do little to address the problems that are facing Americans today."

The dependent variables are unchanged from Experiment 3.

Results

Table 4 shows OLS regression models predicting participants reported likelihood of voting for the candidate and beliefs about the fairness of the policy. Participants were 2.9% ($p < .05$) less likely to vote for a candidate after reading the fairness criticism relative to the control policy. They were also qualitatively less likely to vote for a candidate who was criticize as having proposed a bad policy compared to the control condition (2.5%, $p = .09$; Table 9, Column 1).[18] Of course these effects are not statistically different from one another, but they again highlight the effectiveness of highlighting that the poor are not contributing to tax revenue. (We did not test the combined effect of these two criticisms.)

The fairness criticism qualitatively reduced participants' beliefs about the fairness of the policy compared to the control (B=-.024, p=.10), but none of the effects reached conventional

[18] There is no substantive change with the inclusion of control variables (Table9, Column 2).

statistical significance. By contrast, beliefs about the fairness of the policy were unaffected by the general criticism.

Table 9. A fairness criticism reduced both support for a candidate and beliefs about fairness

	(1)	(2)	(3)	(4)
	Likelihood of Voting for Candidate (0-1)	Likelihood of Voting for Candidate (0-1)	Fairness of Policy (0-1)	Fairness of Policy (0-1)
Control + Fair Criticism	-0.029	-0.030	-0.024	-0.025
	[0.015]**	[0.014]**	[0.015]	[0.014]*
Control + General Criticism	-0.025	-0.023	-0.001	0.002
	[0.015]*	[0.014]	[0.015]	[0.014]
$20,000 to $34,999		-0.012		-0.026
		[0.016]		[0.016]
$35,000 to $69,999		-0.035		-0.043
		[0.016]**		[0.016]***
$70,000 and above		-0.049		-0.061
		[0.018]***		[0.018]***
Age in years		-0.001		-0.001
		[0.000]***		[0.000]**
Female		-0.001		0.006
		[0.012]		[0.012]
Education		0.009		0.007
		[0.003]***		[0.003]**
Strong Democrat		0.152		0.154
		[0.018]***		[0.018]***
Democrat		0.067		0.059
		[0.020]***		[0.020]***
Democrat Lean		0.109		0.105
		[0.022]***		[0.023]***
Republican Lean		-0.101		-0.089
		[0.025]***		[0.026]***
Republican		-0.036		-0.026
		[0.023]		[0.023]
Strong Republican		-0.082		-0.083
		[0.021]***		[0.020]***
Constant	0.536	0.554	0.546	0.547
	[0.010]***	[0.026]***	[0.010]***	[0.026]***
Observations	2503	2485	2506	2488
R-squared	0.002	0.115	0.001	0.107
Sample Mean of DV	0.520	0.520	0.540	0.540
Sample SD of DV	0.300	0.300	0.300	0.300

Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.
The control condition is the excluded category.

Discussion

Consistent with the effect observed in Experiment 3, the fairness criticism undermined support for a politician who proposed expanding social programs without asking the poor to also

pay their fair share. This effect was qualitatively larger than the effect of the general criticism, although they were not statistical different from one another.

General Discussion and Conclusion

While extant work in American politics has focused a great deal on the deservingness of program beneficiaries, it has not considered how tax structures might affect perceptions of deservingness and, in turn, support for redistribution. Our experiments fill this gap in knowledge by providing the first systematic analysis of how Americans want the poor to be taxed. Experiment 1 and Experiment 2 demonstrate in carefully controlled, incentivized, environments that how the poor are taxed affects beliefs about fairness and further that tax policies that make the poor share some of the tax burden are viewed as more desirable. The results from Experiment 1 show that people believe that tax systems are fairer in general and to themselves, as middle earners, when the poor also pay taxes, holding constant distributional outcomes. Participants also rated policies that taxed the poor as more favorable relative to those that did not. In Experiment 2, participants were more likely to choose progressive tax policies that levied taxes on low and low-middle earners compared to progressive policies that did not, even when outcomes were held constant. However, middle and high-middle earners did not want to simply maximize the taxes paid by low and low-middle earners. Instead, they were most supportive of a policy that did not place too much of a tax burden on below-median earners. And indeed, all earners on average rated progressive policies that taxed the poor as fairer than a progressive policy that did not.

Experiment 3 and Experiment 4 tested whether making fairness-based arguments about exempting the poor from paying for an expansion of social programs reduced support for candidates in a competitive election framework. Consistent with the results of the first two experiments, candidates who were criticized on the basis of fairness for not increasing taxes on

the poor to finance social programs received less support than candidates who were not criticized. Further, this occurred even though a considerable proportion of respondents in these survey samples earned below the threshold level at which taxes were imposed and who therefore would have been exempted from the increase in taxes. Thus, even people whose own self-interest might cause greater support were responsive to the fairness criticism. For example, in Experiment 3, participants were more supportive of the candidate in the Poor Not Pay condition compared to the Baseline condition. However, when the candidate was criticized as proposing a financing plan that was unfair (Poor Not Pay + Criticism), this gap in support was cut in half and support for the candidate proposing that the poor be exempted from tax increases became statistically indistinguishable from support in the Baseline condition. Taken together, these four experiments provide strong support for a public goods theory of tax preferences. That is, Americans prefer when no one is allowed to free ride on the tax contributions of others.

This work highlights a previously unidentified factor in explaining public attitudes towards redistribution: that how the poor is taxed affects support. This is also distinct from past work on the comparative political economy of welfare states in that it specifically focuses on taxing the poor within the context of progressive taxation rather than changes the entire tax structure to tax the population more broadly. But consistent with that work, these results also suggest that the focus of the American politics literature on redistribution and social spending is incomplete without also considering taxation. Further, they also imply that voters' willingness to adopt less progressive tax policies should not viewed as a rejection of redistribution without also considering how the money raised is going to be spent. After all, greater redistribution can be accomplished by any number of combinations of taxes and transfers.

Experiment 2 provides a robust experimental framework for examining how varying taxing and spending affects support for redistributive social spending. While heterogenous treatment effects were beyond the scope of our analyses, past work on taxation has documented a number of theoretical constructs like risk-aversion, beliefs about meritocracy, and partisanship that likely affect tax preferences (see Ballard Rosa, Martin, and Scheve 2016). The framework presented here can easily be adapted to more directly examine, for example, whether people who believe low earners have that status because of bad luck or because of a lack of effort have different beliefs about how the poor should be taxed. This design can also be used in the future to address other extensions of our design like accounting for deadweight loss or greater variation in tax revenue, though this is unlikely to change the presence or direction of the treatment effects that we observe here.

While the survey experiments (Experiment 3 and Experiment 4) provided robust evidence for a public goods theory of taxation, they were conducted on a convenience sample of adults, which may not generalize to the entire population of voters. However, we have little theoretical reason to expect that a sample with more variation in levels of income would be less supportive of increasing taxes on the poor to fund expanded social programs, though this is ultimately an empirical question. Additionally, while our design had elements of a competitive election context, it did not require participants to make a forced-choice between two candidates who were proposing competing taxing and spending policies. This would provide a more direct test of how Americans' support for taxing the poor could potentially affect their voting behavior.

In closing, we have presented robust evidence that supports the idea that Americans think about taxation as a problem of public goods. They expect that everyone contributes by paying taxes because everyone benefits from social spending. The experimental results presented in this

paper suggest that the Romney-style criticism of the poor not paying taxes does indeed resonate with American voters. However, we also observe that tax policies that create more "makers", by adding the poor to the tax rolls, increases support for taxation and redistribution. By taxing the poor, they become more entitled to the public good that they helped produce and consequently, the welfare state becomes less contested.

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