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Social Preferences and Redistributive Politics*

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Abstract

We study the link between social preferences and a behaviorally validated measure of support for redistribution. We uncover three fundamentally distinct social preference types: predominantly selfish, inequality averse and altruistic individuals. Inequality averse and altruistic individuals display a much stronger support for redistribution, particularly if they are more affluent. Beliefs about the role of effort and luck for success play no role for selfish individuals but are highly relevant for other-regarding individuals. Finally, while inequality averse individuals display strong support for policies aimed at reducing the incomes of the rich, altruistic individuals are considerably less supportive of these policies.

Key Words: Social Preferences, Altruism, Inequality Aversion, Preference Heterogeneity, Demand for Redistribution

JEL Codes: D31, D72, H23, H24

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I. Introduction

Rising income inequality and the extremely high and salient incomes of top executives have put income redistribution on the political agenda. In the US, for example, almost all the candidates in the democratic presidential primary for the 2020 elections proposed reforms that would have involved substantial changes in the distribution of income.[1] Likewise, left-leaning parties in Germany and the UK support various redistributive measures, and Switzerland held several radically redistributive national plebiscites[2] during the last 10 years. For example, one of these plebiscites (the fair taxes initiative) would have implemented – if supported by a majority – substantially higher tax rates for rich citizens.

What motivates people to support these redistributive policy proposals? Clearly, households with low current and expected future incomes that benefit economically from redistributive policies have a self-interested reason to support redistribution. However, affluent households that would be the net payers of redistributive measures also often support redistributive policies. This suggests that other-regarding ("social") preferences may play a role, i.e., that people care about other individuals' incomes when considering redistributive policies.[3]

In this paper, we examine the extent and the ways in which social preferences are associated with redistributive policies. Moreover, we examine how fundamental differences in people's social preferences help us better understand the support for specific types of redistributive policies. For example, voters with social preferences characterized by an altruistic concern for the worse off may show less support for proposals with

[1] Almost all democratic candidates supported doubling the federal minimum wage, a substantial increase in health care provision, and universal nationally paid family and medical leave programs. And a substantial number of them supported considerably higher taxation of rich households.

[2] Plebiscites are also called "popular initiatives". We use the two terms interchangeably.

[3] Throughout the paper, we use the terms "other-regarding preferences" and "social preferences" interchangeably.

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the primary goal of reducing the income of the rich, while individuals with egalitarian preferences may well support these proposals. These questions are motivated by experimental evidence suggesting that a non-negligible share of individuals displays an altruistic concern for the worse off (see e.g., Andreoni and Miller, 2002; Charness and Rabin, 2002; Engelmann and Strobel, 2004; Fisman et al., 2007, 2015a,b, 2017, 2023; Alger and Weibull, 2013) or a concern for equality or fairness (see e.g. Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000; Bellemare et al., 2008, 2011; Almås et al., 2020). Because concerns for fairness and helping the poor often appear to justify redistributive policies, the social preferences identified in the lab may also play a role in the demand for redistribution.

Using an online experiment, we measure social preferences in a sample of the Swiss population that is broadly representative in terms of age, gender, geographical area, income, and education. We elicit social preferences with the help of a large set of incentivized choice situations where respondents have to decide how to allocate money between themselves and another participant in the study at many different cost levels. We then identify the distribution of preferences using a Bayesian nonparametric clustering algorithm (Kulis and Jordan, 2012). This method infers the prevailing social preference types in the population using the subjects' overall behavior in the money allocation task, and endogenously assigns each individual to types. We use individuals' assignments to social preference types to predict their political support for redistribution, controlling for a large number of socio-demographic characteristics and other determinants of policy preferences previously discussed in the literature.

An advantage of identifying distinct preference types is that it enables us to study how the types differ in their support for (different forms of) redistribution. In this context, we focus on four redistributive policies that are either identical or very similar to policies that were up for vote in recent national plebiscites in Switzerland: a "1:20 proposal" limiting the maximum ratio between the lowest and the highest incomes in a company to 1:20; a "fair taxes initiative" that aims to substantially increase taxes for the

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rich; a minimum wage proposal; and a proposal for an unconditional basic income. We use respondents' support for these policies to construct an individual-level measure of political support for redistribution.

The focus on these redistributive policies has the advantage that our respondents had already been exposed to the pros and cons of the proposals because they were broadly discussed on national TV and in the print media.[4] Two of the redistributive policies for which we elicit individuals' support are exactly identical to previous plebiscites, which gives us the chance to validate our measure of political support for these policies with the observed voting results across Swiss cantons. We find that there is a positive correlation between the geographic pattern of individuals' support for these redistributive policies in our survey and the actual voting patterns in the past plebiscites. In addition, we also validate our measure of support for redistributive policies at the individual level by giving our respondents the option, *two years after our main survey*, to donate money to political and civic organizations that either support or oppose the types of redistributive policies that were up for a vote in the plebiscites. We show that individuals who supported redistributive policies in our main survey (conducted in 2017) are much more willing to donate money (in 2019) to political and civic organizations that support these policies, thereby providing another strong behavioral validation of our survey-based measures of political support for redistribution.

Another advantage of the Swiss set-up is that citizens frequently vote on direct democratic plebiscites, giving them a general feeling of empowerment.[5] This strongly mitigates citizens' distrust of politics and the government because people know that if a referendum proposal receives a majority, it will be turned into law. This is important given that previous work has highlighted the role of (dis)trust in government in shaping citizens' support for redistributive policies implemented by the government (Kuziemko

[4]Most TV viewers in Switzerland watch the national (public) TV, i.e., private TV has a rather low market share. National TV is obliged to be nonpartisan such that all viewpoints are represented.

[5]For a detailed description and analysis of Swiss direct democracy see Funk (2010) and Funk and Gathmann (2011).

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et al., 2015).

The formal application of the Bayesian nonparametric clustering approach to people's choices in the money allocation task yields the existence of three fundamentally different clusters of other-regarding preferences:

(1) A large share of individuals (roughly 50%) makes predominantly egalitarian choices, i.e., their behavior indicates that they generally care about equality in addition to their self-interest. These individuals display *inequality averse* behavior in the sense of Fehr and Schmidt (1999) or Bolton and Ockenfels (2000) because they have a positive willingness to pay to increase poorer individuals' incomes ***and*** to reduce richer individuals' incomes for the sake of equality.

(2) Another large group, comprising roughly 35% of our sample, displays a strikingly different behavioral pattern. These individuals are basically never willing to reduce the other individual's payoff, even in situations where the other individual is much better off. However, like the individuals in the first group, they are willing to sacrifice some money to increase the payoff of individuals who are worse off, i.e., they show aversion to advantageous inequality. Their behavior is therefore consistent with an *altruistic concern for the worse off* as defined by Charness and Rabin (2002) as well as with *altruistic other-regarding CES-preferences* that incorporate an equity-efficiency trade-off as modelled by Fisman et al. (2007, 2015b).

(3) Finally, the third type is characterized by *predominantly self-interested* individuals who generally do not care much about the others' payoffs. These individuals comprise roughly 15% of the sample.

To better understand the potential role of inequality aversion and altruistic concerns for the worse off in the support for redistribution, we incorporate them into a political economy model (Meltzer and Richard, 1981) with proportional taxes and lump-sum redistribution of the tax revenue. This analysis provides important qualitative insights and shows that both inequality aversion and altruistic concerns[6] increase the demand for

[6]We sometimes use "altruistic concerns" as a shortcut for "altruistic concerns for the worse off."

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redistribution in an income-dependent way. The influence of social preferences is limited at low incomes because selfish individuals with lower earnings are already highly supportive of redistribution, and the existence of social preferences among low-income earners cannot add much. Sufficiently strong social preferences are predicted to play a large role at high incomes, however, because selfish individuals are strongly opposed to redistribution, meaning that affluent individuals with social preferences can make a difference. While the model cannot be directly applied to the Swiss plebiscites (because they differ from the distributional policy assumed in the model), the income-dependent effect of social preferences is likely to be generally operative for redistributive policies.

Our empirical results show that both inequality aversion and altruistic concerns play a large role in individuals' support for redistribution that is consistent with the general message of a "social preference augmented" Meltzer-Richard model. For above-median income earners, in particular, inequality aversion is associated with an increase in political support for redistribution of 57 percent of a standard deviation compared to selfish individuals; the corresponding number is 43 percent of a standard deviation for individuals with an altruistic concern. Our results also corroborate the traditional Meltzer-Richards model that assumes purely selfish preferences because we show that selfish individuals indeed display a huge decline in support for redistribution in response to rising incomes: selfish individuals' support in the highest income category is 92% of a standard deviation weaker than their support in the lowest income category. Thus, while selfish individuals' support for redistribution declines steeply as their incomes rise, this income-dependence almost vanishes in inequality averse individuals and it is considerably (roughly 50%) mitigated in altruistic individuals. These findings suggest that omitting controls for social preferences may bias the link between income and support for redistribution downwards (because selfish individuals are lumped together with those with social preferences).

Our results also indicate how insights into the fundamental properties of social preferences can help us better understand the nature of the support for *specific* redistributive

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policies. In particular, egalitarian concerns and altruistic concerns diverge with regard to policies that are primarily perceived as reducing the incomes of the rich for the sake of lower inequality. We would thus expect inequality averse individuals to support plebiscites such as the 1:20 proposal or the fair taxes initiative – that were primarily perceived as reducing the incomes of the rich – while individuals with an altruistic concern might be less enthusiastic towards these initiatives. Our data indeed indicate that inequality aversion is a quantitatively important and significant predictor of support for these initiatives, while altruistic individuals' support is only about half as strong, and altruism is no longer a significant predictor of support for these initiatives. These facts could have potentially far-reaching implications for how different policy makers design and frame redistributive policies. For example, if a political party wants to appeal to inequality averse voters or if policy makers believe that inequality averse individuals constitute a large part of the population, they have an incentive to propose "tax the rich" policies. The social preference-specificity of the support for "tax the rich" versus "help the poor" policies may also provide a preference-based micro-foundation for the support base for "redistribution *from* policies" versus "redistribution *to* policies" that recently received attention in political science (Cavaillé and Trump, 2015; Fong and Poutvaara, 2019).

Our paper contributes and is related to different bodies of research. It is, first, related to a growing body of research that examines the empirical determinants of the demand for redistribution (for a review, see Alesina and Giuliano, 2011). This literature has proposed and identified a list of important factors in the demand for redistribution: individuals' current income as well as future income prospects (Alesina and La Ferrara, 2005), beliefs and biases regarding income mobility (Piketty, 1995; Benabou and Ok, 2001; Benabou and Tirole, 2006; Alesina et al., 2018), beliefs about the role of luck and effort and associated perceptions about the fairness of the income distribution and the tax system (see e.g. Fong, 2001; Alesina and Angeletos, 2005; Alesina and La Ferrara, 2005; Stantcheva, 2021), mistrust in politicians and the government (Kuziemko et al., 2015),

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individuals' risk aversion (Gärtner et al., 2017), as well as the role of beliefs and biases about the prevailing income distribution and individuals' relative income standing (Cruces et al., 2013; Karadja et al., 2017).

However, none of the above-mentioned studies measured and examined the role of other-regarding preferences in the demand for redistribution. In our paper, we control for the factors mentioned in the previous paragraph which enables us to isolate the role of other-regarding preferences above and beyond these determinants of the demand for redistribution. In addition to identifying the role of other-regarding preferences, our results also indicate that beliefs about the role of effort and luck in individual success are important predictors of the demand for redistribution. This finding is in line with previous evidence (see e.g. Fong, 2001; Alesina and Angeletos, 2005; Alesina and La Ferrara, 2005; Stantcheva, 2021). Interestingly, however, we also find that these beliefs play no role for predominantly selfish individuals, while they are important predictors for the demand for redistribution for individuals with social preferences. This is consistent with previous research (Fong, 2007) showing that other-regardingness is a precondition for these beliefs to play a role in the support for redistribution.

Our study is also related to the literature on the distribution of social preferences in broad population samples (see e.g. Bellemare et al., 2008, 2011; Fisman et al., 2015a,b, 2017, 2023), and the literature that relates social preferences to issues of political economy (see e.g. Tyran and Sausgruber, 2006; Dhami and al Nowaihi, 2010; Dawes et al., 2012; Durante et al., 2014; Dimick et al., 2016; Fisman et al., 2017; Kerschbamer and Müller, 2020; Almås et al., 2020; Müller and Renes, 2021).

We differ from the literature mentioned above on the distribution of social preferences in broad population samples in several ways. First, while this literature typically relies on structurally esimated individual-level preference parameters, we applied a non-parametric method that (i) identifies a parsimonious set of fundamentally (i.e., *qualitatively*) distinct preference clusters in the population and (ii) assigns each individual to one of the clusters. This approach is guided by the debate about the generalizability of

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laboratory social preference measures (see e.g. Levitt and List, 2007a,b; Falk and Heckman, 2009; Camerer, 2015; Kessler and Vesterlund, 2015) that suggests that structurally estimated (i.e., *quantitative*) preference parameters from laboratory experiments rarely generalize quantitatively to field settings but that lab measures provide useful information about *qualitative* behavioral differences in the field.

Second, none of these studies examined the support for redistributive policies that were actually up for vote in popular referenda (or are similar to such proposals). Our approach has the advantage of allowing us to validate our measures of support for redistribution, and to unambiguously yield measures of supports for actual policy proposals. This contrasts with the literature which tends to rely on questions that measures a "general willingness to redistribute" or to proxy demand for redistribution with political affiliation or support for a politician, which confounds redistribution with other policy goals.

Third, our empirical analysis of the role of the identified social preference types in the demand for redistribution is guided by an explicit model that incorporates the empirically identified social preference types into the canonical Melzer-Richard approach. By linking our social preference measures (i) to behaviorally validated measures of redistributive policies that (ii) were actually up for vote in plebiscites while (iii) controlling for all previously discussed motives for redistribution in the political economy literature, we are able to show that inequality aversion and altruistic concerns predict the demand for redistribution above and beyond the motives previously discussed, and to show that the role of inequality aversion is particularly pronounced in plebiscites that aim to curtail the incomes of the rich. It also enables us to document the social preference specificity of the role of luck/effort beliefs for the demand for redistribution.

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II. Research design

II.A. Institutional setting and redistributive policy proposals

Switzerland is a confederation of 26 member-states that are called cantons. A key element of the Swiss political system is direct democracy: adult Swiss citizens regularly vote on a variety of topics. Votes take place at the national, cantonal, and municipal levels and typically occur four times a year. For our purposes, one advantage of this political system is that it separates redistributive proposals from other policies.

Another advantage of direct democracy for our study is that the specific plebiscites are extensively covered in the media, and debates about politics are very common between friends, family, and colleagues. Over a period of 3-4 months before a national plebiscite the benefits and costs of a proposed law change are widely discussed on national TV, in the newspapers, in the social media, and in the general population. Each voter also receives a booklet with his or her ballot about one month before the vote. This booklet provides detailed information on the plebiscite, including the positions of the Swiss Federal Council, the parliament, and the group that initiated the plebiscite. Therefore, voters are relatively well informed about the various pros and cons of a proposal before casting their vote, and the discussions provide frequent opportunities to deliberate on how to weigh them.

Using an online survey, we elicited Swiss citizens' political support for four different redistributive proposals: a "1:20 proposal" aimed at limiting the maximum ratio between the lowest and the highest incomes in a company to 1:20; a "fair taxes initiative" that wants to substantially increase taxes for the rich; a minimum wage proposal; and a proposal for an unconditional basic income. These proposals, which we describe in details in Appendix A4, were identical (or very similar) to proposals that were up for vote in recent national plebiscites. We measured support for these proposals by asking our respondents to indicate whether they would support or oppose the initiatives, should they be put to vote "this weekend". We described the content of each of these initiatives us-

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ing a wording that is very similar to the one that was used in the official voting booklets distributed to every Swiss citizen before each vote. The respondents could provide one of five possible answers: "Support", "Rather Support", "Don't Know", "Rather Reject", "Reject".

These proposals differ in terms of their primary goals. The 1:20 and the fair taxes initiative were primarily framed and publicly discussed in terms of reducing income inequality by either imposing higher taxes on the rich (fair taxes initiative) or by constraining the top incomes in companies (1:20 initiative). Hence, a *distaste for inequality* might explain support for these initiatives. Even individuals who must bear economic costs from redistribution might be willing to support these proposals, provided their distaste for inequality is large enough. This focus on taking away money from the rich was basically absent in the minimum wage initiative. The public discourse on the initiative for the unconditional basic income was, however, also strongly focused on the implications for the public budget and the necessary tax increases.

II.B. Measuring other-regarding preferences

We measured respondents' other-regarding preferences using a considerable number of incentivized money allocation tasks ("dictator games") that systematically varied the cost of redistribution. In each task, the participant had to decide how to allocate experimental currency units (ECUs) between herself and an anonymous other participant of the study.[7] Figure A.1a in Appendix A1 provides an example of how we presented a choice situation to the subjects. There were always seven interpersonal allocations (labeled by 1 to 7) available per choice situation, and all of them were located on a budget line. Each available allocation consisted of a specific distribution of ECUs between the participant (bars labeled by "You receive") and the other person (bars labeled by "other person receives"). To make the trade-offs involved salient, we represented the available

[7]All subjects also knew that any form of reciprocity was ruled out, i.e., it was transparent that the decision-maker could not receive any money from any recipient in the money allocation task.

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choices numerically and graphically. This presentation format makes the distributional consequences and the total payoff implications of the available choice options very transparent to the subjects. Figure A.1b plots the budget line corresponding to the example depicted in Figure A.1a in the "self-payoff (w_{own}) – other's payoff (w_{other})" space. In this example, the slope of the budget line is -2, indicating that for every ECU the dictator gives up, the other individual receives 2 ECUs. Perfect equality in payoffs can be achieved by choosing allocation 4.[8]

A key feature of the set of budget lines we used is that they have both positive and negative slopes. Negatively sloped budget lines with different slopes enable us to measure individuals' willingness to pay to *increase* the other's income, while positively sloped budget lines make it possible to measure subjects' willingness to pay to *decrease* others' income for the sake of, e.g., achieving a higher level of equality. The different choice situations (i.e., budget lines) appeared in individualized random order on subjects' screens. One choice situation was randomly chosen for payment at the end of the online survey (with 100 ECUs = CHF 2.5).

We provide the information about all choice situations presented to subjects in Appendix A2. We use a total of 14 money allocation tasks (budget lines) to identify social preference types and the distribution of individuals across types. Each budget line crosses the 45-degree line, which is why we label them as being part of the "center bundle" (see Figure A.2b in Appendix A2).[9]

[8]Since the average amount of ECU's at stake across all choice situations was roughly 750, the graphical representation scaled all ECU amounts relative to 750 (i.e. 750 represented 100%). For example, a payoff of 950 was represented by a (950/750) = 1.267 times larger bar than a payoff of 750.

[9] We use two additional sets of tasks to assess the robustness and predictive validity of the types identified on the basis of the center bundle. In the "north bundle" the feasible money allocations are always (weakly) above the 45-degree line, i.e., the decision-maker is always (weakly) worse off than the other participant. In the "south bundle" the feasible allocations are (weakly) below the 45-degree line such that the decision-maker is always (weakly) better off. In the validation exercise presented in Appendices B3 and B4 we show that the types identified on the basis of the center bundle provide good out-of-sample predictions for the north and the south bundle.

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II.C. Other determinants of political support for redistribution

Throughout the survey, we also collected a large set of additional covariates. Many of them have been mentioned in the previous literature on the political demand for redistribution (e.g., beliefs about the determinants of success). As the purpose of our study is to isolate the role played by social preferences, we use these measures as controls in our empirical analyses. However, they also provide further insights about the role of these factors in a political setting that provides ideal conditions for studying demand for redistribution.[10] For details on the measurement of these covariates, see Appendix A5.

II.D. Data collection and sample implementation

We conducted the online survey in collaboration with the LINK Institute, a leading company for high-quality market research in Switzerland, in March and April 2017. Because we are primarily interested in studying the link between social preferences and political support for redistribution, we restricted our attention to individuals who are eligible to vote, i.e. citizens who hold a Swiss passport and are older than 18. While Switzerland has four official languages (French, German, Italian and Romansh), we focus only on Swiss citizens from the French and German language area, who make up more than 90% of the Swiss population. The LINK Institute reached out to participants per email by sending them an invitation (in their corresponding languages) which contained an URL to our online survey. All the instructions were displayed on participants' screens. In order to mitigate spillovers between the money allocation task and the measures of policy preferences, policy preferences with regard to some randomly determined initiatives were elicited before the money allocation task, while others were measured after it. In addition, we always had several other survey questions that were used as filler questions between these measures. For their participation in the study, respondents were

[10]The questions used to measure these covariates were distributed throughout the survey, and we also used them to separate the money allocation task from the different questions that measured individuals' political support for the national plebiscites.

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paid a show-up fee of CHF 15.[11] In addition, we incentivized respondents' choices in the money allocation task by implementing one of their decisions. The exchange rate between points in the money allocation task and Swiss Francs was 100 points = CHF 2.5. Median time to complete the survey was 62 minutes, for which respondents were paid CHF 26 (incl. the show-up fee) on average, provided they completed the survey fully.

Sample characteristics

Our sample comprises data on 815 participants spanning 24 of the 26 cantons. Descriptive statistics on participants' socio-demographic characteristics can be found in Table A.1 in Appendix A3. Overall, our sample is broadly representative of the Swiss voting population in the German and the French language areas with respect to age, gender, geographical area, income, and education (see Table A.2 in Appendix A3).

Follow-up study

Two years after the main survey, we conducted an obfuscated follow-up study with the same respondents to collect additional information. We could survey 70% of the original subjects, which is remarkably high given that 2 years passed between the two waves. In Appendix A3, we show that the respondents of the follow-up are not significantly different (in terms of their observable characteristics) from our original sample. Importantly, we also show that attrition is orthogonal to social preferences (see Appendix A6). In Appendix A7 we provide further details on the tasks implemented in the follow-up study.

[11] At the time the survey took place, the exchange rate between Swiss Francs and USD was approximately equal to CHF 1 = USD 1.

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II.E. Validating the measure of political support for redistribution

Based on a respondents' support for the four initiatives described in Section II.A., we define individual i's support for policy proposal j as follows:

$$S_{ij} = \begin{cases} 1 & \text{if response} \in \{\text{Support, Rather support}\} \\ 0 & \text{if response} \in \{\text{Don't know}\} \\ -1 & \text{if response} \in \{\text{Rather reject, Reject}\} \end{cases}$$

We then construct an individual-level measure of average political support for redistribution (AS_i for average support of individual i) by averaging an individual's support for the four initiatives:

$$AS_i = \frac{1}{4}\sum_{j=1}^{4} S_{ij}$$

This variable is slightly skewed to the left, with an average support of 0.28 and a standard deviation of 0.57.

As in other countries, there are sizeable differences across regions (i.e., cantons) in the support for redistribution in Switzerland. The percentage of people supporting redistribution is rather low in some cantons, while it is relatively high in others. One of the advantages of eliciting people's support for redistribution for actually conducted referenda from the past is that we can check the validity of our measure of political support by comparing the geographic distribution of support in the actual referendum with the support for the same political measures in our online survey. In our survey, we elicited support for two referenda (the unconditional basic income initative, and the initiative for fair taxes) *exactly as they were proposed* at the time they were put to vote. If our measure of political support for redistribution contains relevant information about participants' real preferences for politically enforced redistribution, we should observe a positive correlation between the actual vote share in favor of the redistributive proposals and the average support for these redistributive proposals in our sample. The positive Spearman correlation of $\rho = 0.61$ displayed in Figure 1 below shows that this is indeed

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the case.[12]

[FIGURE 1 ABOUT HERE]

We further validate our measure of support for redistribution in the follow-up study using donation tasks with *real* monetary stakes. In these tasks, subjects received an endowment of CHF 20 and had to decide how much of the CHF 20 to keep for themselves and how much to donate to civic groups. Subjects could donate money to groups that support redistribution as well as to groups that oppose redistribution.[13] These tasks provide us with behavioral measures of support for redistribution that enables us to check whether those who voted for (opposed) redistributive policies in the main survey are also more likely to donate real money to civic groups that politically favor (oppose) redistribution.[14]

The validation results are shown in Table A.4 in Appendix A8. Columns 1 to 3 indicate that respondents who display a stronger political support for redistribution donate significantly more to organizations that support redistribution ($p < 0.01$). The large coefficient of *AS* on donations provides strong evidence for the behavioral relevance of our measure of political support for redistribution. Likewise, Columns 4-6 show that individuals with a stronger average support for redistribution donate considerably less to

[12]Previous research indicates that individuals exhibiting altruistic behavior in dictator games tend to vote at higher rates compared to selfish individuals (see, e.g., Fowler, 2006; Fowler and Kam, 2007). One might therefore worry that the relationship depicted in Figure 1 may be distorted. We find that this is not the case: the correlation remains positive and strongly significant even if we exclude selfish subjects. Moreover, excluding the canton of Schaffhausen (where voting is compulsory) also does not affect the correlation.

[13]To avoid that participants are primed by our instructions, we decided *not* to reveal the identity of the different organizations. Instead, we provided them with examples of organizations that either support redistribution or oppose it. For further details, see Appendix A7.

[14]Note that the follow-up study took place two years after the initial study. Therefore, a significant positive (negative) correlation between subjects' average support for redistribution in our online survey and their donations to civic organizations that support (oppose) redistribution would not only validate our measure of average support for redistribution but also indicate that individuals' political support for redistribution is rather stable over time.

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organizations that oppose redistribution. Thus, taken together, our measure of political support for redistributions appears to be well-validated.

III. The empirical distribution of social preferences

The main goal of this section is to identify the distribution of the various types of social preferences on the basis of subjects' behavior in the money allocation task. Previous evidence (e.g. Andreoni and Miller, 2002; Bellemare et al., 2008; Fisman et al., 2015b, 2017; Kerschbamer and Müller, 2020; Bruhin et al., 2019) suggests that there is strong heterogeneity in social preferences. We are interested in the question whether the distribution of preferences can be captured parsimoniously with a small number of types that exhibit fundamentally different behavioral characteristics.

We approach this task by applying a formally rigorous nonparametric approach to characterize the preference heterogeneity in the population. More specifically, we adopt a Bayesian nonparametric approach – the Dirichlet Process (DP) means clustering algorithm – introduced by Kulis and Jordan (2012).[15] DP-means groups individuals into clusters according to behavioral similarities between them. In our application, an individual is characterized by its payoff allocation in *all* 14 choice situations of the center bundle.[16] For each budget line, we label the own-payoff maximizing allocation by $z = 1$, the own-payoff-minimizing allocation by $z = 0$, and the payoff-equalizing allocation by $z = 0.5$. The other four available allocations on each budget line are equidistantly placed between $0 - 0.5$ and $0.5 - 1$, respectively. In this context, similarity refers to how "close" individuals are with respect to their allocation behavior in a 14-dimensional budget allocation space.[17]

[15] In Appendix B1, we examine the choice behavior of subjects in the money allocation task at the descriptive level. We show that this level of analysis already provides indications that there may be fundamentally different social preference types. However, this exercise only provides suggestive evidence without being fully conclusive, which is why we focus on the rigourous characterization of the type distribution in the main text.

[16] For details on these choice situations, see Figure A.2b in Appendix A2.

[17] We describe the formalism and the intuition underlying the DP-means algorithm

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The application of the DP-means algorithm to the center bundle of the money allocation task suggests the existence of three behavioral types. Roughly half of the subjects (50.8%) are assigned to Type 1, around one-third (34.36%) to Type 2, and the remainder (14.85%) to Type 3. The three types differ substantially in terms of their behavior. To illustrate these behavioral differences, we display the behavior of the different types in terms of individuals' median choices among the negatively and the positively sloped budget lines (see Figure 2) because this simplifies the presentation considerably. It is, however, important to keep in mind that the clustering results are based on *all* individual choices in the center bundle and not just on subjects' median choices. In Figure 2, we restrict ourselves to the median choices for purely illustrative purposes.[18]

[FIGURE 2 ABOUT HERE]

The figure shows that the vast majority of individuals in type 1 make median choices that are payoff-equalizing – and they do so for both the negatively sloped budget lines (Figure 2a) and the positively sloped budget lines (Figure 2b). They thus exhibit a willingness to pay (i) for reducing inequality when this involves increasing the other individual's payoff (i.e., for negative slopes) and (ii) when it involves decreasing the other individual's payoff (i.e., for positive slopes). For this reason, we assign the label *inequality averse* to type 1 – which comprises 50.8% of our sample.

This pattern contrasts sharply with the individuals assigned to type 2 and type 3. Individuals assigned to type 3 (see Figure 2e and 2f), in particular, deviate sharply from

in some detail in Appendix B2. Here, we report only the results of the clustering and provide an interpretation of the different clusters in terms of subjects' preferences. For a detailed discussion of the DP-means algorithm, see also Fehr ⓡ al. (2023).

[18]Recall that subjects' behavior *within* the class of negatively sloped budget lines informs us about *how much* money they are willing to sacrifice to *increase* another individual's payoff. In contrast, their behavior *within* the class of positively sloped budget lines informs us about *how much* money they are willing to sacrifice to *decrease* another individuals' payoff. Thus, the distinction between negatively and positively sloped budget lines is important because it enables us to capture the fundamental difference between the willingness to pay to *increase* and the willingness to pay to *reduce* other people's income.

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the inequality averse type: in the vast majority of the cases their median choice is the own-payoff maximizing allocation regardless of whether budget lines have a positive or a negative slope. These 14.8% of individuals can therefore be characterized as *predominantly selfish*. Finally, individuals assigned to the type 2 cluster differ sharply from the inequality averse type for positively sloped budget lines where the own-payoff (and simultaneously other-payoff) maximizing allocation is basically their median choice in 100% of the cases (see Figure 2d). However, the behavior of type 2 individuals for the negatively sloped budget lines resembles that of the inequality averse individuals because the egalitarian allocation is their median choice in roughly 70% of the cases (Figure 2c). Thus, these individuals are *willing to increase* other individuals' payoff in the domain of advantageous inequality, i.e., when they are better off than others, but they are *never willing to reduce* other individual's payoff on positively sloped budget lines to avoid disadvantageous inequality. We therefore label individuals belonging to this type, 34.4% of our population, as subjects with an *altruistic concern*. The label "altruistic" is due to their willingness to sacrifice money to mitigate advantageous inequality and help those worse off.[19]

Another remarkable aspect of Figure 2 is that there is generally very little within-type variation, as indicated by the low standard deviation associated with each of the graphs shown in the figure. This low within-type variation provides a further justification for speaking of different types of preferences; and the fact that the typical choices of the three types sharply differ justifies the notion that the preference differences across types are of a fundamental nature.[20]

[19]The same three types, with an identical behavioral interpretation, are also suggested by the descriptive analysis we report in Appendix B1.

[20]If our preference interpretation of the behavioral types is correct and stable across budget bundles, the different types should display characteristic behavioral patterns in the north and the south bundles (see footnote 9). We find that the behavioral types identified on the basis of individuals' behavior in the center bundle predicts the types' behavior in the south and the north bundle very well (See Appendices B3 and B4).

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IV. The role of social preferences in political support for redistribution

In this section, we examine the empirical role of social preferences in the support of the different redistributive policies. Since all four plebiscites have strong redistributive implications, we first examine the role of social preferences on an individual's average support for these four plebiscites (AS_i, defined in section II.E.). We then sort the plebiscites into those that primarily aim to reduce the income of the rich (the 1:20 and the fair taxes initiative) and the plebiscites that primarily aim to improve the income of those with relatively low earnings (the minimum wage and the unconditional basic income initiative). We do this because the political organizations that initiated the plebiscites framed their initiatives in these terms. In addition, we verify in Appendix C6 that the people perceived the 1:20 and the fair taxes initiative as reducing the incomes of the rich while the minimum wage and the unconditional basic income plebiscites were perceived primarily as improving the incomes of low-income earners. Therefore, the two different types of plebiscites might appeal to individuals with different types of social preferences (see Section IV.D. below).

IV.A. Theoretical considerations

Before we enter the empirical analysis, it is, however, useful to guide our intuitions about the role of social preferences in redistributive politics by a few theoretical considerations. For this purpose, we integrate social preferences into a stylized model of the demand for redistribution to better understand how inequality aversion and altruistic concerns may affect this demand.

To keep the model simple, we assume – like in the classic paper by Meltzer and Richard (1981) – a proportional tax τ ($0 \leq \tau \leq 1$) on individuals' gross income y_i that is redistributed lump-sum via a transfer T to everybody. Tax collection and redistribution involves a quadratic redistribution cost of $\frac{1}{2}\tau^2$ per unit of gross income. Consumption c_i

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of individual i is given by

$$c_i = (1-\tau)y_i + T \tag{1}$$

and the government's budget is balanced if the lump-sum transfer is given by

$$T = \left(\tau - \frac{1}{2}\tau^2\right)\bar{y} \tag{2}$$

where $\bar{y} = \frac{1}{n}\sum_{i=1}^{n} y_i$ denotes the average gross income in the population. To examine the role of social preferences we assume that individuals' preferences are given by a utility function inspired by Fehr and Schmidt (1999):

$$V_i = c_i - \alpha_i \frac{1}{n-1}\sum_{j\neq i}\max(c_j - c_i, 0) - \beta_i \frac{1}{n-1}\sum_{j\neq i}\max(c_i - c_j, 0). \tag{3}$$

V_i denotes individual i's utility, α_i is a measure of aversion against disadvantageous inequality ($c_j - c_i > 0$) and β_i measures the aversion against advantageous inequality or a willingness to help those who are worse off ($c_i - c_j > 0$). For simplicity, we assume that individuals compare themselves to all other members of the population, i.e., n comprises the population of the polity.

The three distinct types of individuals identified in the previous section can be nicely captured with the help of equation (3). The selfish type is characterized by $\alpha_i = \beta_i = 0$. The inequality averse type is captured by $\alpha_i > 0$ and $\beta_i > 0$. This follows from the fact that the inequality averse individuals generally chose the egalitarian allocation for negative and positively sloped budget lines: $\alpha_i > 0$ follows from choosing the egalitarian allocation for positively sloped budget lines (Figure 2b) and $\beta_i > 0$ is implied by the choice of the egalitarian allocation on negatively sloped budget lines (Figure 2a). In contrast, the altruistic type is characterized by $\alpha_i = 0$ and $\beta_i > 0$. These individuals were willing to sacrifice money to *improve* the situation of worse off individuals on negatively sloped budget lines (Figure 2c), implying that $\beta_i > 0$. However, they were not willing to sacrifice money to *reduce* the other individuals' payoff for the sake of equality on positively sloped budget lines (Figure 2d), i.e., they are not averse against disadvantageous inequality

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($\alpha_i = 0$).

On the basis of the above assumptions – linear tax, lump-sum transfers to everybody, quadratic redistribution costs, no other taxes and public expenditures, balanced budget, etc. – it becomes immediately clear that the model does not apply directly to any of our four referenda. Note also that the model restricts the motivational forces for the demand for redistribution just to two factors – self-interest and social preferences. However, we believe that the model nevertheless can provide valuable intuitions about the potential role of social preferences in the demand for redistribution

We derive the first-order condition for an individual's demand for redistribution in terms of the preferred redistributive tax τ_i^* in Appendix C1. This condition implies that τ_i^* is given by equation 4 below.

$$\tau_i^* = 1 - \frac{1}{\bar{y}}\left(y_i - \alpha_i \frac{1}{n-1}\sum_{j\neq i}\max(y_j - y_i, 0) - \beta_i \frac{1}{n-1}\sum_{j\neq i}\max(y_i - y_j, 0)\right) \tag{4}$$

Expression 4 implies that selfish individuals' ($\alpha_i = \beta_i = 0$) demand for redistribution falls with their gross income y_i. At very low incomes ($y_i \approx 0$) selfish individuals demand a tax rate of almost 100% while at incomes above $\bar{y}$ their demand is zero.[21] Except at very low incomes ($y_i \approx 0$), individuals with social preferences have a higher demand for redistribution because of $\alpha_i > 0$ and/or $\beta_i > 0$.[22]

For individuals with low incomes it is mainly the distaste against disadvantageous inequality ($\alpha_i > 0$) that increases their demand for redistribution because for most income comparisons they face disadvantageous inequality. In contrast, for individuals with high incomes it is mainly their willingness to mitigate advantageous inequality (i.e., their β_i-parameter) that increases their demand for redistribution because in most income comparisons they face advantageous inequality. Taken together, social preferences thus mitigate the decline in τ_i^* that is predicted for selfish individuals.

[21] Recall that $0 \leq \tau \leq 1$.

[22] We illustrate the role of social preferences in the demand for redistribution graphically in Appendix C1.

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Note also that because selfish individuals with low incomes already demand very high levels of redistribution the model suggests that the potential impact of social preferences at low incomes levels is limited while at high income levels the scope for a role of social preferences is higher. Finally, because $\alpha_i > 0$ for inequality averse individuals while $\alpha_i = 0$ for the altruistic type, inequality averse individuals have, ceteris paribus, a stronger preference for redistribution in this simple model. However, since aversion against disadvantageous inequality ($\alpha_i > 0$) is particularly relevant at lower income levels, where even selfish individuals have a high demand for redistribution, it may be difficult to detect the differential impact of different types of social preferences on the demand for redistribution empirically.

IV.B. The empirical role of social preferences

In this section, we link subjects' social preferences to their political support for redistribution.[23] We illustrate the role of social preferences in Figure 3 below which depicts the average support for redistribution as a function of individuals' income for each of the three preference types. The figure displays four salient facts.

(i) At low incomes, differences in the support for redistribution across preference types are very small. Selfish individuals' support for redistribution is roughly similar to the support of individuals with social preferences.

(ii) The support for redistribution steeply declines with income for selfish individuals.

(iii) The decline in support for redistribution with income is strongly mitigated by social preferences.

(iv) At higher incomes, individuals with social preferences show a much larger support for redistribution than selfish individuals.

[23] In Appendix D, we also explore the link between individual characteristics and i) social preferences, and ii) political support for redistribution.

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Note that, qualitatively, the patterns described in (i) – (iii) are suggested by the theoretical model presented in the previous section.

[FIGURE 3 ABOUT HERE]

To provide insights into the quantitative role of social preferences we also show their "effect size" in Table 1. This table displays the difference in the average political support for redistribution between each of the two social preference types and selfish individuals as a percentage of the standard deviation of average political support. The table reinforces the impression conveyed by Figure 3 that at higher incomes individuals with social preferences support redistribution much more than selfish individuals. For example, inequality averse individuals with monthly incomes of CHF 8,000 – 10,000 and > CHF 10,000 are between 50 and 70 percent of a standard deviation more supportive of redistribution than selfish individuals.

[Table 1 ABOUT HERE]

Figure 3 and Table 1 describe the role of social preferences without controlling for other redistributive motives discussed in the literature. To examine whether the descriptive results presented above survive these controls we regress individuals' average support for redistribution (AS) on a dummy variable for being a member of the inequality averse group and another dummy for belonging to the group with altruistic concerns, and a large set of control variables. The omitted category in these regressions are individuals who are assigned to the predominantly selfish type.[24]

In all regressions, the individual-specific controls comprise age, age squared, gender, income, dummy variables indicating whether the respondent is married, whether French

[24]We use dummy variables for the two social preference types in view of the fundamental behavioral differences between the different types and because of the relatively low individual-level variation within types (see Figure 2 above). We also check for potential influences of within-type heterogeneity in preferences in Appendix C4.2; the results in this appendix indicate that our basic conclusions remain intact when we allow not only for between but also for within-type heterogeneity in preferences.

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is the mother tongue, and whether a respondent did not reveal her income.In addition, we include education dummies that indicate whether a respondent's highest educational achievement is a) compulsory school (omitted category), b) vocational training, c) high school, d) university, or e) other. The regressions also comprise occupation dummies that indicate whether the individual currently a) has a full-time job (omitted category), b) has a part-time job, c) is unemployed or d) is not in the labor force. Finally, all regressions control for canton fixed-effects. We report the results of our estimates in Table 3. In the first four columns of Table 2 we study the *average* effect of social preferences while in columns 5 – 7 we examine the role of social preferences at different income levels. The full regression results with the coefficients of *all* covariates is shown in Table C.1 in Appendix C2.

[TABLE 2 ABOUT HERE]

Column 1 shows that the two dummies for social preferences play on average a significant and quite large role in the support for redistribution. The coefficient of 0.186 for inequality aversion implies, for example, that the members of this group support redistribution more strongly than selfish types by 32 percent of a standard deviation.[25] Column 1 also indicates that individuals' income is on average negatively associated with support for redistribution. The negative coefficient of -0.071 on income implies that an individual in the highest income category is, *on average*, 48 percent of a standard deviation less supportive of redistribution compared to an individual in the lowest income category.[26] These effects also survive the inclusion of a host of controls that the literature has identified as potentially important determinants of support for redistribution (columns 2-4).[27]

[25]The overall SD of average support for redistribution, indicated at the bottom of Table 2, is 0.58. Thus, 0.186/0.58 = 0.32.

[26]Moving up one income category decreases support for redistribution by 0.071 and the highest income category is by 4 categories higher than the lowest income category such that the former's support for redistribution is 4 x 0.071 = 0.284 lower. Dividing by one standard deviation of political support (0.58) yields 48 percent.

[27]The regressions in Table 2 include all the subjects, including those who did not pass

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Columns 1 – 4 estimate the average role of social preferences across all income classes. However, the theoretical model in the previous section as well as Figure 3 and Table 1 suggest that social preferences have less scope for influencing the demand for redistribution at lower incomes because self-interested individuals at low incomes will already have a high demand for redistribution. Thus, estimating the average association between social preferences and support for redistribution across incomes levels (as in columns 1-4) hides the fact that the role of social preferences is income-dependent. For this reason, we run separate regressions in columns 5 and 6 for individuals with income levels below CHF 6,000 and those with income levels equal to and above CHF 6,000, respectively. Since 49.95 percent of our sample population has incomes smaller than CHF 6,000 we refer to the two groups as below and above-median income earners. In both regressions we apply the full set of controls.[28]

As suggested by Figure 3, column 5 shows that the role of social preferences is much smaller and even insignificant for individuals below the median income. Column 6 shows, in contrast, that social preferences play a much larger role for above median income earners. For example, the coefficient 0.330 for inequality aversion in column 6 implies that inequality averse above-median income earners' support for redistribution is 57% of a standard deviation of political support stronger than those of selfish individuals.

Finally, in column 7 of Table 2 we consider again all individuals in the sample but interact the social preference dummies with income. This means that the coefficient on income captures only the selfish individuals' income-dependence of political support for

one or both of the attention checks. We show in Appendix C4.1 that if we exclude individuals who do not pass one or both of the attention checks the influence of social preferences and income becomes even larger. For example, if we consider only those subjects who pass both attention checks (Table C.2), inequality aversion is associated with a 40 percent of a standard deviation larger support for redistribution than the selfish individuals (while in Table 2 it is 32 percent of a SD larger). To remain on the conservative side, however, we decided to keep all subjects in our standard analyses.

[28]Because 82 respondents decided not to disclose their income, the sum of observations in columns 5 and 6 does not coincide with the total number of participants in our study.

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redistribution. The coefficient of -0.133 in column 7 implies that selfish individuals display a sharp decline in support for redistribution at higher incomes: the support of those in the highest income category is 92% of a standard deviation weaker than the support of those in the lowest income category. This contrasts sharply with the much lower income dependence of political support for individuals with social preferences. For example, for inequality averse individuals the income dependence of political support is given by the sum of the coefficients for "income + income x inequality aversion" which is only -0.133 + 0.91 = -0.42, a coefficient which is no longer significantly different from zero (p = 0.11). Likewise, the income dependence of political support is roughly 50% weaker for altruistic compared to selfish individuals.[29,30]

Taken together, the results in this section indicate a significant and rather large direct role of social preferences in the support for redistribution – a conclusion that is robust when controlling for a large number of covariates previously discussed in the literature.[31] However, as we show in the next section, this does not yet fully exhaust the role of social preferences in the demand for redistribution.

[29]Note also that throughout columns 1 – 4 in Table 2, the five different income classes were assigned integers from -2 to +2 such that 0 captures individuals in the income class CHF 6,000 – 8,000. This labeling of income classes is inconsequential for the coefficients in regressions 1 – 4 but in column 7 it implies that the coefficients of the social preference dummies capture the role of social preferences at the income class CHF 6,000 – 8,000.

[30]To further assess the substantive effect of the interaction in light of the estimate error, we examine the interaction between *predicted* support for redistribution (predicted using the model estimated in column 7 of Table 2) and income categories as well as social preference types in Appendix C3. We show that this analysis nicely replicates Figure 3 that uses the raw data.

[31]In Appendix C4, we conduct a variety or robustness checks. In particular, we show that i) social preferences do *not* predict support for a placebo initiative, ii) accounting for within-type heterogeneity does not fundamentally change the conclusions reached with three types, and iii) controlling for political identity does not affect the effect of inequality aversion for support fro redistribution but it slightly weakens the effect of altruistic concerns.

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IV.C. Social preferences and beliefs about the role of luck and effort

In columns 2 - 4 of Table 2, we controlled for the strength of beliefs that "effort matters" and that "luck and inheritance matters" for an individual's success. Many previous studies (e.g. Fong, 2001; Alesina and La Ferrara, 2005; Alesina and Giuliano, 2011) have shown that these two variables have substantial explanatory power for political support for redistribution. In fact, it is probably fair to say that these two variables are among the most important predictors of support for redistribution. And our study is no exception (see Table 2). On average, people who more strongly believe that luck and inheritance matter for success are substantially more likely to support redistribution ($p < 0.01$), while individuals who more strongly believe that effort matters for an individual's success are significantly less likely to support redistribution ($p < 0.01$).

The influence of beliefs about effort, luck and inheritance on the demand for redistribution basically rests on meritocratic fairness arguments (Cappelen et al., 2007; Almås et al., 2020). Meritocratic fairness arguments are based on the notion that an individual's effort generates an entitlement to the incomes produced through effort while income acquired through mere luck is not associated with such an entitlement. Based on this view, individuals who have generated their income and wealth through their own effort deserve to be wealthy while individuals who are just lucky are less deserving and, therefore, it appears more justified to redistribute some of their wealth.

Note however that individuals who care about meritocratic fairness automatically also care about other people's payoff, i.e., they are not indifferent to how much others earn and deserve to earn. In other words, they are not entirely selfish but should have some sort of other-regarding preference. In contrast, for individuals who are entirely selfish it is not clear why beliefs about effort and luck should matter for their demand for redistribution. After all, a perfectly selfish individual cares only about herself and redistribution is therefore favored if the individual benefits from it and opposed if she has to pay for it – and this holds irrespective of the source of inequality.

If behaviorally relevant meritocratic concerns are based on other-regarding prefer-

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ences, one should observe that selfish people show little or no concern for meritocracy while inequality averse or altruistic individuals show such a concern, i.e., we predict that beliefs about the role of effort and luck are only behaviorally relevant for the demand for redistribution of other-regarding individuals but not for selfish individuals.[32] We show that this is indeed the case in Appendix C5, where we report *type-specific* regressions. We find that the coefficients for "effort matters" and "luck and inheritance matters" are close to zero and insignificant for selfish individuals, while they are large and significant for inequality averse individuals and for those with an altruistic concern. For example, a one unit increase in the belief that luck and inheritance matter for success among individuals who are inequality averse or have an altruistic concern is associated with an increase in support for redistribution by 16 percent or 28 percent of a standard deviation, respectively.

IV.D. Is inequality aversion associated with stronger support for initiatives that focus on reducing the income of the rich?

Our previous results show that *both* inequality aversion and an altruistic concern for the worse off play a considerable role in the average support for redistribution. Aggregating across various redistributive proposals has the advantage of smoothing the inevitable randomness in respondents' answers, but it has the disadvantage of hiding that the two types of other-regarding preferences may play a heterogeneous role across the different policy proposals. In fact, inequality aversion and altruistic concerns differ from each other with regard to the willingness to incur a cost to reduce the income of the rich for the sake of achieving equality.

Two of the plebiscites have a strong egalitarian flavor – the 1:20 and the fair taxes initiatives. Their initiators framed both of these initiatives in terms of rectifying the

[32] It is worthwhile to point out that if this were the case, then other-regarding preferences would also provide a basis for motivational forces that *oppose* redistribution because the belief that effort is key for an individual's success is typically a robust predictor of opposition to redistribution.

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unjust distribution of income and the unfairly low taxes that rich people pay in a fair number of Swiss cantons. We asked the participants of our follow up study how they perceived these initiatives in terms of redistributive consequences. With regard to the 1:20 plebiscite, we asked whether the initiative will primarily "increase the income of those who earn little" or "decrease the income of those earning a lot" on a five-point scale. The rationale for this question is that restricting the relationship between the lowest and the highest income in a company could, in principle, lift up the salaries of the low-paid or reduce the salaries of the highly paid employees. With regard to the fair tax plebiscite, we asked whether participants believe that this initiative will primarily "reduce the taxes of those with low incomes" (i.e., benefit the people with low incomes) or "increase the taxes of those with high incomes". The vast majority of the people perceived these initiatives as decreasing the incomes of the rich and only a tiny minority perceived them as increasing the incomes of those who earn little (see also Figure C.3 in the Appendix). These initiatives might therefore be particularly appealing to individuals who are generally inequality averse, while people with an altruistic concern for the worse off may find them less appealing.

[TABLE 3 ABOUT HERE]

Are the above conjectures regarding the differential role of inequality aversion and altruistic concerns borne out by the data? Table 3 shows how these preferences are associated with the overall support for the "reduce the income of the rich" initiatives while controlling for the full set of control variables. Column 1 of Table 3 shows that inequality aversion is highly significant ($p < 0.01$) and almost twice as important as altruistic concerns in these referenda while the coefficient for altruistic concerns is not significant. The difference between the coefficient on inequality aversion and altruistic concerns is also significant ($p = 0.038$). The coefficients of inequality aversion and altruistic concerns in column 2, which shows the results when income is interacted with social preferences, confirms this picture. The coefficient on inequality aversion is much larger and significantly different ($p = 0.05$) from the one on altruistic concerns.

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Which role do the two different social preference types play in the unconditional basic income and the minimum wage initiative? These two initiatives were strongly motivated by improving the situation of workers and families with low incomes and the public discussions were focused on the situation of low-income people and how to improve their economic situation. We also asked the participants of our follow up study how they perceived these initiatives in terms of redistributive consequences. As Figure C.3 in the Appendix shows, the large majority perceived them as being primarily about improving the incomes of those who are less well off. Therefore, we term them "help the worse off" initiatives. For these initiatives there is no reason for the two different social preference types to display different support for redistribution as both types showed a willingness to sacrifice own income for the sake of those who are worse off in the money allocation task.

Column 3 and 4 present the regression results for these initiatives. The regression coefficients indicate that both inequality aversion and altruistic concerns appear to have a similar role in "help the worse off" referenda – an impression that is confirmed by the fact that the coefficients clearly are not significantly different from each other ($p = 0.498$ in column 3 and $p = 0.697$ in column 4). Taken together, the results thus suggest that inequality aversion plays a more prominent role than altruistic concerns whenever income reductions for the rich are the primary focus while in "help the worse off" referenda the two types of social preferences appear to be roughly equally important.

V. Summary and conclusions

In this paper, we examined the role of other-regarding preferences for individuals' support for redistribution. To answer this question, we took advantage of Swiss direct democracy. Using an online experiment with a broad sample of the population, we measured Swiss citizens' support for four strongly redistributive proposals that were actually put to vote in national plebiscites in recent years. This enabled us to provide a strong behavioral validation of our measure of support for redistribution. Our study

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also included a set of incentivized decisions in an interpersonal money allocation task that enabled us to identify the existence and quantitative relevance of distinct clusters of social preferences. Applying a Bayesian nonparametric clustering method to these experimental data, we show that the empirical distribution of social preferences can be parsimoniously described in terms of three qualitatively distinct social preference types with a clear behavioral interpretation: inequality averse individuals, individuals with altruistic concerns for the worse off, and predominantly selfish individuals.

We incorporate these social preference types into a Meltzer-Richards model of the demand for redistribution and show that their influence is likely to be income dependent, with social preferences being more likely to play a role for richer individuals'. We document a quantitatively large association between social preferences and political support for redistribution, with an effect size that is in a similar ballpark to the average association between income and support for redistribution. This relationship between social preferences and support for redistribution remains robust even after controlling for a large number of covariates, including socio-demographic variables and other important determinants of demand for redistribution previously discussed in the literature. In addition, we show that the link between social preferences and support for redistribution strongly depends on income, with social preferences playing a particularly strong role at above-median incomes. In particular, while rising incomes are associated with a steep decline in support for redistribution for selfish individuals, they are *not* significantly associated with a decline in support for redistribution for inequality averse individuals.

Our analysis also shows that social preferences help us better understand the role of meritocratic beliefs on the role of effort and luck in the support for redistribution. Previous research has indicated that these beliefs are among the most important explanatory factors. Here, we document that these beliefs play a quantitively large and highly significant role for individuals with social preferences, but a very small and insignificant role for selfish individuals. Thus, other-regardingness appears to be a precondition for meritocratic fairness arguments to become relevant for the support for redistribution.

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Finally, we show that knowledge about the distribution of individuals to fundamentally distinct social preference types helps us better understand who is likely to support specific redistributive policies. While inequality averse individuals display strong support for policies that primarily aim to reduce the incomes of the rich, altruistic individuals are considerably less supportive of these policies. This fact could have potentially far-reaching implications for how different policy makers design and frame redistributive policies. For example, if a political party wants to appeal to inequality averse voters or if policy makers believe that inequality averse individuals constitute a large part of the population, they have an incentive to propose "tax the rich" policies.

Our findings also suggest interesting questions for future research. Knowledge about the existence of three different social preference types may, in particular, pave the way for a deeper understanding of how individuals respond to information about the extent or the sources of inequality. Because inequality averse individuals are directly concerned about the extent of income inequality, they should be particularly prone to respond to new information about the prevailing inequality while self-interested people (who do not care about the overall income distribution) have little reason to change their demand for redistribution in response to such information.

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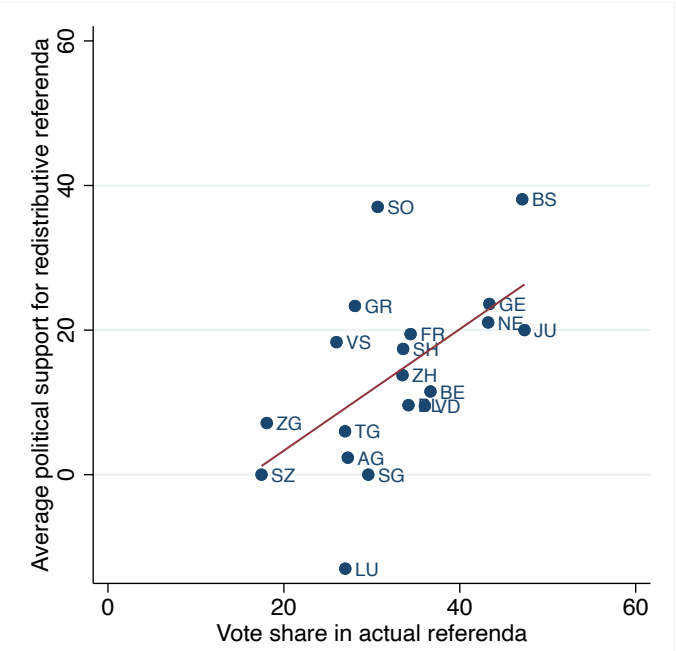
Figure 1: Correlation between the average support for redistribution in the online survey and the actual vote share for the same policy measures in the referenda



Note: The Figure is constructed using the 19 cantons for which we have a minimum of 15 observations. It is based on the two referenda for which elicited political support in our online survey exactly corresponds to the text put to vote (the unconditional basic income initative and the initative for fair taxes).

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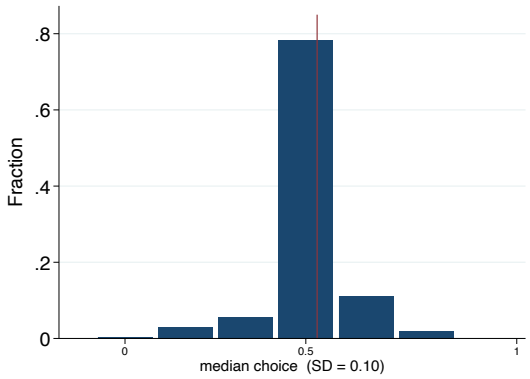
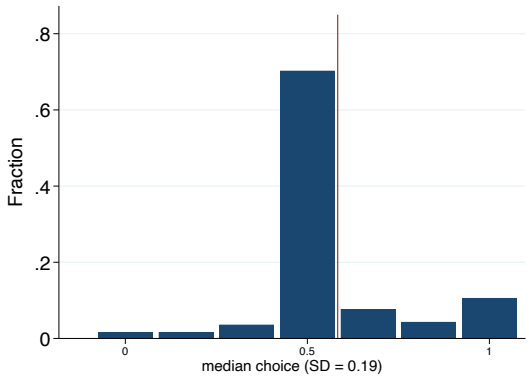
Figure 2: Distribution of individuals' median choices for each preference type.

Type 1 : Inequality averse (50.8%)

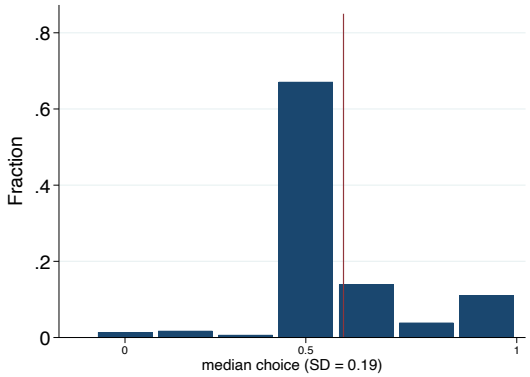


(a) Negatively sloped budget lines

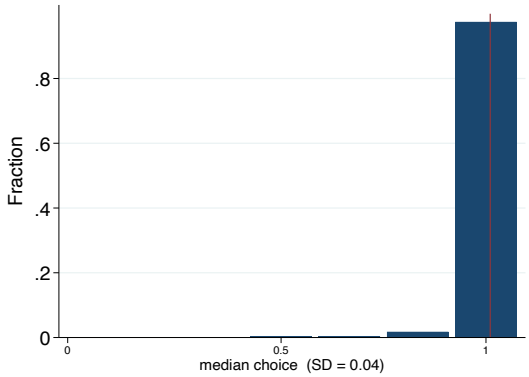


(b) Positively sloped budget lines

Type 2 : Altruistic (34.4%)

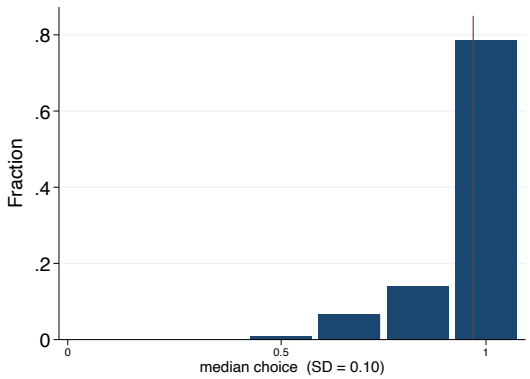


(c) Negatively sloped budget lines

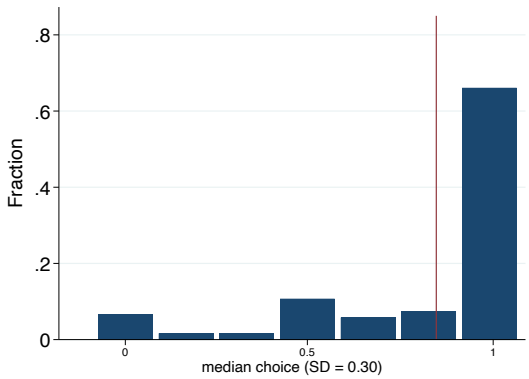


(d) Positively sloped budget lines

Type 3 : Predominantly selfish (14.8%)



(e) Negatively sloped budget lines



(f) Positively sloped budget lines

Note: The figure shows the distribution of individuals' median choices among negatively sloped and among positively sloped budget lines for each of the three behavioral types identified by the clustering algorithm. For each budget line, $z = 1$ indicates an own-payoff maximizing choice, $z = 0$ indicates an own-payoff minimizing choice, $z = 0.5$ indicates a payoff-equalizing choice. The red vertical line indicates always the average over all median choices. SD indicates the standard deviation of median choices.

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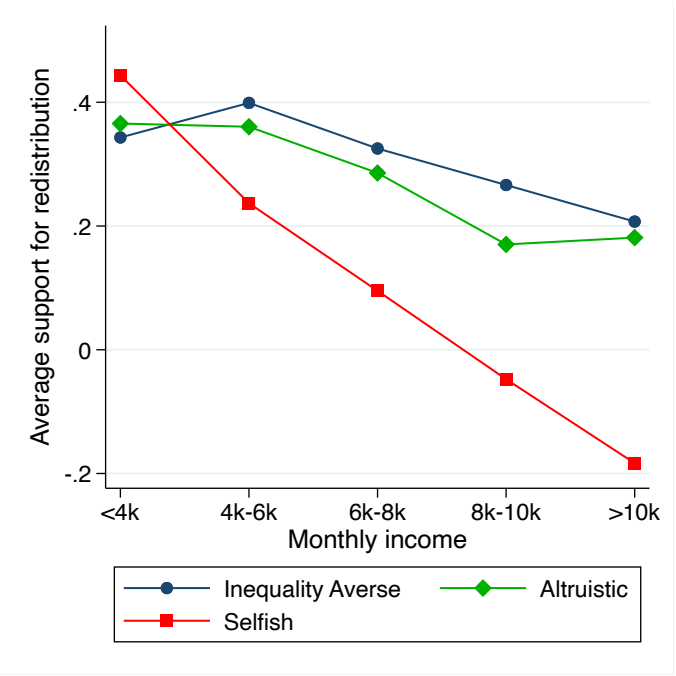
Figure 3: Support for redistribution as a function of income and preference type



Note: The figure shows the average support for redistribution as a function of income and preference type.

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Table 1: The increased demand for redistribution in individuals with social preferences relative to individuals with selfish preferences

	Monthly income				
	$< 4k$	$4k - 6k$	$6k - 8k$	$8k - 10k$	$> 10k$
Inequality aversion	-0.17	0.28	0.41	0.54	0.67
Altruistic concern	-0.14	0.21	0.34	0.37	0.63

Note: The table shows how average political support for redistribution differs between individuals with social preferences and selfish individuals as a percentage of the standard deviation of average political support for redistribution.

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Table 2: Social preferences and average political support for redistribution

	Full sample				Below median income	Above median income	Full sample (interactions)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Inequality averse	0.186***	0.197***	0.199***	0.186***	0.035	0.330***	0.210***
	(0.063)	(0.063)	(0.063)	(0.063)	(0.091)	(0.107)	(0.067)
Altruistic	0.159**	0.154**	0.158**	0.149**	0.059	0.249**	0.165**
	(0.069)	(0.069)	(0.069)	(0.069)	(0.098)	(0.116)	(0.074)
Income	-0.071***	-0.067***	-0.064***	-0.065***	-0.021	-0.126***	-0.133***
	(0.021)	(0.021)	(0.021)	(0.020)	(0.064)	(0.048)	(0.048)
Income x Inequality averse							0.091*
							(0.052)
Income x Altruistic							0.067
							(0.052)
Male	0.008	-0.007	-0.005	-0.013	-0.018	-0.001	-0.014
	(0.048)	(0.048)	(0.048)	(0.048)	(0.065)	(0.081)	(0.048)
Age	0.019*	0.010	0.008	0.008	-0.005	0.028	0.008
	(0.011)	(0.010)	(0.010)	(0.010)	(0.015)	(0.022)	(0.010)
Effort matters for success		-0.113***	-0.110***	-0.122***	-0.146***	-0.105	-0.117***
		(0.040)	(0.039)	(0.039)	(0.048)	(0.070)	(0.039)
Luck and inheritance matter for success		0.120***	0.122***	0.111***	0.142***	0.075	0.109***
		(0.028)	(0.029)	(0.029)	(0.043)	(0.048)	(0.029)
Have been unemployed in past			0.062	0.071	0.056	0.016	0.072
			(0.046)	(0.046)	(0.065)	(0.079)	(0.046)
Beliefs about future upwards mobility			0.066	0.080*	-0.022	0.095	0.075
			(0.047)	(0.047)	(0.065)	(0.077)	(0.047)
Perceived past upwards mobility			0.033	0.022	0.067	-0.001	0.025
			(0.042)	(0.042)	(0.062)	(0.072)	(0.042)
Trust in strangers				0.069***	0.068**	0.069*	0.068***
				(0.022)	(0.030)	(0.037)	(0.021)
Mistrust in politicians				0.066**	0.087**	0.074	0.066**
				(0.032)	(0.043)	(0.060)	(0.033)
Perceived inequality				0.014	0.001	0.029	0.013
				(0.022)	(0.028)	(0.040)	(0.022)
Constant	-0.539**	-0.349	-0.413	-0.482	0.104	-1.362**	-0.507
	(0.252)	(0.325)	(0.328)	(0.328)	(0.469)	(0.576)	(0.327)
Other socio-demographics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Occupation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other preference measures	No	Yes	Yes	Yes	Yes	Yes	Yes
Canton FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Overall SD average support for redistribution	0.58	0.58	0.58	0.58	0.58	0.58	0.58
R^2	0.083	0.124	0.129	0.146	0.220	0.218	0.151
Observations	815	813	813	813	364	367	813

Notes: OLS regression. The dependent variable is the average support for redistribution. Other socio-demographics include age squared, a dummy variable indicating whether the respondent's native language is french, a dummy indicating whether the respondent is married, and a dummy indicating whether the respondent did not disclose his/her income. Education includes dummies indicating a respondent's highest educational achievement (compulsory school, vocational training, high school, university or other), and occupation includes dummies indicating whether the individual currently has a full-time job, a part-time job, is unemployed or is not in the labor force. Other preference measures include risk aversion, patience, negative and positive reciprocity. Levels of significance: $*p < 0.1, **p < 0.05, ***p < 0.01$

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Table 3: The role of social preferences in "reduce the income of the rich" and "help the worse off" initiatives

	Reduce income of the rich		Help the poor	
	(1)	(2)	(3)	(4)
Inequality averse	0.241***	0.268***	0.130	0.153*
	(0.078)	(0.081)	(0.080)	(0.084)
Altruistic	0.126	0.153*	0.171**	0.177**
	(0.085)	(0.089)	(0.084)	(0.089)
Income	-0.088***	-0.179***	-0.043	-0.086
	(0.023)	(0.057)	(0.026)	(0.057)
Income x Inequality averse		0.108*		0.075
		(0.062)		(0.062)
Income x Altruistic		0.109*		0.025
		(0.063)		(0.061)
Male	0.023	0.022	-0.050	-0.050
	(0.056)	(0.055)	(0.063)	(0.063)
Age	0.004	0.004	0.012	0.012
	(0.012)	(0.012)	(0.013)	(0.013)
Effort matters for success	-0.087*	-0.082*	-0.157***	-0.153***
	(0.049)	(0.049)	(0.048)	(0.048)
Luck and inheritance matter for success	0.121***	0.117***	0.102***	0.101***
	(0.034)	(0.034)	(0.035)	(0.035)
Have been unemployed in past	0.072	0.071	0.071	0.073
	(0.055)	(0.055)	(0.058)	(0.058)
Beliefs about future upwards mobility	0.112**	0.107*	0.048	0.044
	(0.056)	(0.056)	(0.060)	(0.060)
Perceived past upwards mobility	0.062	0.065	-0.017	-0.015
	(0.051)	(0.051)	(0.054)	(0.054)
Trust in strangers	0.081***	0.079***	0.057**	0.056**
	(0.026)	(0.026)	(0.027)	(0.027)
Mistrust in politicians	0.049	0.048	0.083*	0.085**
	(0.036)	(0.036)	(0.042)	(0.042)
Perceived inequality	0.013	0.012	0.016	0.014
	(0.025)	(0.025)	(0.029)	(0.029)
Constant	-0.585	-0.604	-0.380	-0.409
	(0.392)	(0.389)	(0.404)	(0.404)
Other socio-demographics	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes
Occupation	Yes	Yes	Yes	Yes
Other preference measures	Yes	Yes	Yes	Yes
Canton FE	Yes	Yes	Yes	Yes
Overall SD average support for redistribution	0.58	0.58	0.58	0.58
H0: Inequality Averse = Altruistic	0.038	0.050	0.498	0.697
R^2	0.141	0.146	0.112	0.114
Observations	813	813	813	813

Notes: OLS regression. The dependent variable is the average support for redistribution. Other socio-demographics include age squared, a dummy variable indicating whether the respondent's native language is french, a dummy indicating whether the respondent is married, and a dummy indicating whether the respondent did not disclose his/her income. Education includes dummies indicating a respondent's highest educational achievement (compulsory school, vocational training, high school, university or other), and occupation includes dummies indicating whether the individual currently has a full-time job, a part-time job, is unemployed or is not in the labor force. Other preference measures include risk aversion, patience, negative and positive reciprocity. Levels of significance: $^*p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$

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