Trade-Offs Between Redistribution and Environmental Protection: The Role of Information, Ideology, and Self-Interest*

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Forthcoming in Journal of European Public Policy
Pre-Publication Version: 6 April 2020

Abstract

Reducing economic inequality and combatting climate change are two strongly supported policy goals, but they will require significant public investments. In times of limited fiscal resources, governments struggle to raise additional revenues needed to finance both, making trade-offs between generally supported policy goals likely. But how do citizens decide if they have to choose between goals they support in principle, such as spending on efforts to reduce inequality and channeling resources toward initiatives to protect the environment? We discuss three major factors that help explain this choice – information, self-interest, and ideological orientation. Our experimental study shows that information is not a significant determinant of such choices, and that ideology is only important as long as there are no conflicting goals. Once citizens have to decide between redistribution and environmental protection, myopic self-interest trumps all other theoretically relevant variables mentioned in the literature.

Keywords: survey experiment; redistribution; environmental protection; policy trade-offs; public opinion

Supplementary materials, data, and replication code for this article can be accessed at the homepage of the Journal of European Public Policy.

* We wish to thank Isabelle Stadelmann-Steffen, David Weisstanner and all the participants of the DVPW Political Economy Conference 2019 in Constance and the Annual Meeting of the Swiss Political Science Assocation 2020 in Lucerne for helpful comments on earlier versions of this paper. The paper significantly benefited from the excellent feedback of the three anonymous reviewers and Jeremy Richardson.

Introduction

Two of the most pressing challenges governments face nowadays are rising economic inequality and climate change. As indicated by mounting media attention and political protest, both issues have the potential to cause significant political disruption in the future if they are not being addressed with substantial policy interventions. These policy interventions, however, will not come cheap. The European Union (EU) Commission's recently proposed European Green Deal, aiming for zero net emissions of greenhouse gases by 2050, speaks of significant investment needs equivalent to more than 1.5 percent of annual gross domestic product (GDP). The even more ambitious "Green New Deal" proposal by some U.S. democrats actively combines redistributive and environmental policies and would cost at least two percent of annual GDP.[1]

Even though combatting inequality and climate change at the same time is possible, both require significant financial resources financed either by taxes, government debt, or expenditure cuts in other policy areas. In times when austerity and budgetary discipline has become the dominant macro-economic paradigm (Blyth 2013), it is difficult for governments to substantially increase taxes or debt to finance such an ambitious endeavor. As a result, they have to balance a spending trade-off between two desirable but incompatible features. Depending on the governments' fiscal situation, the severity of such a trade-off can vary across countries and over time. The most extreme version implies that spending on one policy is reduced in favor of a competing policy, whereas a softer version means that money spent on one policy cannot be given to a competing policy. In both instances, however, governments face a trade-off between income redistribution and environmental protection. With Green New Deal policies gaining traction not only in the United States but also in Europe, we believe that such a trade-off is likely to become even more salient and politicized in the future.

Citizens mandate political parties and politicians to implement their general preferences in democratic elections, including more or less income redistribution and

[1] The economic costs of inaction would arguably be much higher in the mid-/long-run when climate damages start to impact on human health, infrastructure, and agriculture (Martinich and Crimmins 2019).

more or less environmental protection, without being forced to consider the costs, consequences, and trade-offs of these general preferences. In stark contrast, decisions on specific policy reforms in times of limited fiscal resources, made either in parliament or through popular votes, involve clear choices in favor of one specific policy reform at the cost of another. In this paper, we focus on such trade-offs and ask what drives citizens' decisions when they have to choose between two policies that they otherwise support. Moreover, redistribution and environmental protection are arguably the two core issues that left parties face nowadays. Studying voters' priorities concerning these two policies could shed light on the potential determinants of a vote choice between green parties (issue ownership over environment) and social democrats (issue ownership over redistribution).

We answer this question using a survey of Swiss citizens' choices between environmental protection and income redistribution, which are both strongly supported policy goals in Switzerland. In our survey, more than two-thirds of the respondents would like the government to reduce income inequality and increase environmental protection. What happens, however, when citizens face a trade-off where more resources for one policy come at the cost of fewer resources for another policy?

We are particularly interested in how information, political ideology, and self-interest shape individual preferences in such trade-off situations. Most work on individual policy positions focuses on attitudes (orientations). Typical questions concern the general support for welfare provisions (e.g. Andress and Heien 2001, Svallfors 1997, 2007) or whether certain groups deserve and therefore should benefit from social policies (Aarøe and Petersen 2014, Jensen and Petersen 2017, van Oorschot 2006). In this paper, we focus on choices. We thus contribute to a relatively new and growing literature on trade-offs. Almost 20 years ago, Boeri et al. (2001) published a seminal analysis of trade-offs between socio-economic policies. They demonstrated that a positive orientation towards single policies – such as broad support for generous pensions – does not entail that citizens opt for this policy when they learn that they have to pay its price through higher taxes or social security contributions. Such hard choices and their determinants have moved to the center of recent analyses of social and fiscal policies (Häusermann et al. 2019, Busemeyer 2017, Busemeyer and Garritzmann 2017, Garritzmann et al. 2018, Bremer and Bürgisser 2019a, 2019b).

We analyze data from an experimental survey that we fielded in Switzerland in 2017. The two policies under consideration are environmental protection and income redistribution. The experimental treatment is information on the state of the environment and on the respondent's actual position in the income hierarchy. Our dependent variables are unconstrained preference questions for redistribution and environmental protection, and we simulate two trade-off decisions. The importance trade-off situation concerns the relative importance accorded to the goal of reduced income inequality and the goal of improved environmental quality. The spending trade-off is a simulated spending decision, i.e. the respondent's choice of distributing more of a certain sum of public expenditures towards either income redistribution or environmental protection. We do not study the most extreme form of a trade-off when spending on one policy is reduced in favor of the competing policy since this is not a realistic scenario in Switzerland's economic and political context.

We show that information only plays a marginal role. If support for one policy does not come at the expense of the other policy (i.e., in unconstrained settings), political ideology and self-interest are important determinants of the strength of individual preferences for redistribution and environmental protection. In contrast, faced with a choice between supporting environmental protection or income redistribution, a citizen's decision is mainly driven by myopic self-interest, which we infer from their income position. Ideological positions do not matter in that setting. Likewise, this decision is not strongly influenced by information. Instead, individual short-term economic interests trump all other potentially important explanatory variables. A healthy environment, such as rich biodiversity, is a collective and, therefore, non-excludable good with the same utility for all income groups.[2] Redistribution is a cost for high-income groups. Although they benefit from the insurance function of the welfare state, they are net-contributors whose contributions to social provisions exceed the benefits they extract from the welfare state. In contrast, low-income groups receive transfers without having to cover all the costs. Therefore, high-income groups prefer environmental policies over redistribution, because the former increase their quality of life, while the latter entail costs in terms of their tax loads. In contrast, low-income groups benefit both from redistribution and environmental protection. However, as far as maximizing short-term individual utility is concerned, increases in

[2] If environmental protection is financed by regressive taxes (e.g., carbon or consumption taxes), high-income groups may enjoy a net-benefit from environmental policies.

income are preferable to the benefits of a diffuse collective good such as environmental protection.

The remainder of this article is organized as follows: We start with a discussion of the effects of information, ideology, and self-interest on individual preferences for redistribution and environmental protection in unconstrained and constrained settings. We then describe the research design, data, and methodology. We proceed to report our findings and conclude.

Theory: Information, Ideology and Material Interest

Three major explanations help to account for citizens' policy choices. One branch of the literature argues that when they make policy decisions, citizens process information and weigh this knowledge in favor or against a policy option. A second strand of the academic discussion focuses on the role of ideology. We use 'ideology' in the sense of belief systems. By belief systems, we mean "a configuration of ideas and attitudes in which the elements are bound together by some form of constraint or functional interdependence" (Converse, 2006: 3). Finally, we also consider the role of self-interest. By self-interest, we mean the concern for the individual's own advantage in terms of resources, such as money, derived from the implementation of one policy over another, i.e. maximizing individual utility.

The Role of Information, Knowledge, and Arguments

A classic theory of democracy argues that democracy is about reaching common decisions through the means of debates among citizens. A historical example is Pericles' famous speech on the occasion of a funeral of soldiers when he characterized democracy as premised upon participation and serious deliberations,[3] which are also the assumptions underlying the textbook definitions of democracy (Berelson et al. 1954). Citizens' ability to use information and knowledge to assess the quality of different arguments and to increase the consistency of their beliefs and preferences is an essential element of this textbook theory of democracy. Citizens are assumed to

[3]See Thucydides: http://classics.mit.edu/Thucydides/pelopwar.mb.txt (accessed 04.02.2020).

learn continually and to alter their views to reflect better information and more persuasive arguments (Goodin, 2008). For example, a majority of Swiss citizens are well informed and derive their voting decisions in an argument-driven way (Kriesi 2005).

However, a broad literature indicates that "large portions of the electorate do not have meaningful beliefs, even on issues that have formed the basis of intense political controversy among elites for substantial periods of time" (Converse, 2006: 51-2). Likewise, basic political knowledge is low. In light of such broad empirical evidence, Achen and Bartels (2016) concluded that the 'folk theory of democracy' is unrealistic.[4] Consequently, citizens make their decisions without carefully considering specific arguments in favor or against specific policies because they simply do not know these arguments and the data the latter are based on.

Overall, there is mixed evidence on the role that information plays in swaying voters' preferences in experimental studies. Several studies report a significant effect that information exerts on individual policy preferences. Information about the actual income rank affects redistribution preferences (Cruces et al. 2013), contrary policy information shifts opinion away from the party's position (Boudraeu and MacKenzi 2013), positive information on retirement plans increases enrollment rates (Duflo and Saez 2003), information on immigration statistics changes attitudes towards immigration (Grigorieff et al. 2018), and, finally, information about inequality changes tax policy preferenes (Boudreau and MacKenzie 2018).

Others argue that information does not change individual policy preferences or that information has differential effects across groups, with some changing their preferences following an information treatment and others remaining unaffected (e.g. Nyhan and Reifler 2010, Card et al. 2012, Chetty and Saez 2013, Flynn et al. 2017, Hopkins et al. 2019, Nyhan et al. 2019). The core message of these studies is that correct information may change factual perceptions but does not necessarily alter associated attitudes, because "political misperceptions are typically rooted in directionally

[4] This does not imply that citizens fail to identify the political representatives that are closest to their political views (Dalton 2019). Likewise, de Vries (2018) argues that EU citizens can form an appropriate judgment about European governance, even if they lack political sophistication. Such judgments do not strongly rely on information and the careful weighing of different arguments.

motivated reasoning, which limits the effectiveness of corrective information about controversial issues" (Flynn et al. 2017: 127). In other words, the extent to which accurate perceptions would sway attitudes remains unclear.

Even though we remain agnostic regarding the role of information in preference formation overall, we assume that our specific study is a most-likely case to find a positive effect. First, in order to gauge this effect, our experiment makes respondents attentive to pertinent information presented clearly and simply. Comprehending and absorbing the treatment, therefore, demand little cognitive ability (Carpini and Keeter 1996: 216), which in turn facilitates policy learning and increases the chance of information and knowledge underpinning voters' policy decisions. Hence, the experimental conditions raise the likelihood of finding a positive and significant information effect. Second, respondents are exposed to particularly strong information: We inform them of their actual position in the income hierarchy, which frequently differs from their perceived placement, and tell them about the degradation of Switzerland's biodiversity, which is a prominent dimension of environmental protection. The latter contradicts a widely held belief that Switzerland's environmental protection efforts have achieved extremely positive results.

We, therefore, expect that support for redistributive and/or environmental policy changes in line with the direction and strength of the information treatment. Respondents who learn that they are better (or worse) off than initially assumed should prefer lower (or higher) redistribution. Likewise, the extent of misperception could be crucial for the effect of information. The larger the difference between actual and perceived income, the larger the information effect is likely to be. Similar changes in effect and its direction could be expected as far as the perception of environmental achievements is concerned.

H1: When informed about their actual position in the income distribution and/or Switzerland's biodiversity degradation, individuals adjust their redistribution and/or environment protection preference in line with the direction and strength of their misperception.

The Role of Ideology

Political beliefs are a second factor explaining policy choices. We focus on ideological beliefs, defined as general political orientations that are relevant for decisions on income redistribution and environmental protection. One set of attitudes concerns environmental policies. Major examples are post-materialist orientations (Inglehart 1977, 2008) or positive orientations towards environmental protection goals, such as supporting the view that environmental degradation is a pressing policy challenge. Similarly, if respondents state that income inequality is a significant problem, we expect these respondents to support income redistribution. We apply the standard left-right measure as an indicator of ideological beliefs on the choice between more state and redistribution and unbridled market and no government responsibility in correcting the income distribution. Although it is clear that the libertarian/post-materialist-authoritarian/materialist dimension is different from the state-market dimension (Kitschelt 1994, Kitschelt and Rehm 2014, Kriesi et al. 2008), both dimensions are hardly orthogonal (e.g. Hutter and Kriesi 2018). Instead, post-materialist attitudes empirically correlate with pro-state attitudes, and the left-right scale is a rough representation of both dimensions (cf. Lachat 2018).

We therefore expect that respondents with post-materialist or left-leaning ideologies are more likely to opt for environmental policies. Likewise, we expect respondents' believing in a fair distribution of the social product or embracing the left to be more likely to support greater income distribution. Hence, ideology should have a substantial effect on citizens' preferences for both policies.

H2: The more left-wing a respondent, the higher his or her preference for both income redistribution and environmental protection is.

The Role of Self-Interest

Finally, the third factor accounting for policy attitudes and policy choices has to do with self-interest, understood in a narrow sense as myopic self-interest: Citizens have preferences for the maximization of their current income. If they face a choice between more resources for them and support for a common good, such as a healthy environment, they opt to increase their resources. This behavior typically describes

low-income households that are in favor of both a healthy environment and more income for themselves. In contrast, high-income groups derive no material net-benefits from redistribution. Therefore, faced with the same choice, they value environmental quality more than redistribution – even if, for ideological reasons, they support both. We emphasize that self-interest and the favored policy are at the top of the head of each individual. They can be identified without any further analysis and without any further information beyond what is instantly available to any individual. The only information he or she needs is his or her income level, which determines whether his or her income will benefit or suffer from redistribution.[5]

H3: The higher the respondent's income, the lower his or her preference for income redistribution, while preferences for environmental protection and income are not correlated, holding ideology constant.

This very narrow definition of self-interest does not overlap with the definition that rational choice approaches in political economy often adopt. The latter perspective usually presents citizens as fully or at least sufficiently informed about the economic context of their choice and as capable of running some basic economic calculus (Persson and Tabellini, 2000). Hence, they are aware of their relative position in the income distribution, and their preference for redistribution increases linearly with the difference between their income and the median income. They evaluate information about their relative income position and correct their preferences for redistribution accordingly. We therefore expect the experiment to show information effects in line with hypothesis 1.

Attitudes in Constrained and Unconstrained Settings

Settings are important for the expression of political preferences and choices, and this relationship is key to our argument. Focusing on general social policy preferences, Margalit (2013) has shown that if economic self-interest and ideology conflict, activated motives of self-interest may dominate temporarily, but ideological

[5] It is not always simple to identify the exact net beneficiaries of redistributive policies (though the likelihood increases with lower income) and individuals need to know their relative income position. However, almost 50% of the respondents correctly place themselves within +/- one income decile and almost 75% within +/- two income deciles (see Figure A5 in the SI).

orientations prevail in the long run. In a similar vein, Neimanns et al. (2018) demonstrate that ideology moderates the influence of material self-interest on support for social investment in trade-off settings. Thus, self-interest seems to matter less for left-wing respondents because they are more solidaristic and dislike trade-offs. In contrast, Busemeyer and Garritzmann (2017) argue that self-interest dominates ideology when individuals decide in policy trade-offs. We argue that these findings do not contradict one another. Rather, individuals' behavior depends on contextual factors and the policy trade-offs at stake. If respondents do not face a choice between redistribution and environmental protection (i.e., in an unconstrained setting) and can express their general preferences, we expect ideology to have a significant effect on support for both goals, with respondents on the left favoring these goals more than respondents on the right. Support for a given policy-proposal, to which no price-tag is attached, arguably reflects general orientations about the proposal's desirability.

In contrast, if the decision to expand one policy entails a decision against the expansion of the other policy, citizens need to weigh their preferences and reach a conclusion about which policy is more important for them. National elections, in which votes for political parties largely reflect the general ideological preferences of the electorate, are good examples of the expression of general preferences. In contrast, direct democratic choices frequently constitute situations in which citizens decide on a specific policy generally aware of the costs and consequences of these policies. Citizens consider both their policy demands and the costs these decisions impose on them as taxpayers. They are in a trade-off setting where preferred policies lead to a reduction in net income (Frey 1994, Feld and Kirchgässner 2000, Wagschal 1997). This explains why the major impediment to the expansion of the Swiss welfare state has frequently been the defeat of such proposals in popular votes (Armingeon 2001), although the Swiss general public is generally very much in favor of a strong welfare state.

Table 1: Expected conditional effects of ideology and self-interest on constrained and unconstrained preferences

	Relative income below the median		**Relative income above the median**	
	Preferences	*Choices*	*Preferences*	*Choices*
Ideological position to the left	RED + ENV +	RED > ENV *RED: desirable and direct benefits* *ENV: desirable but less direct benefits*	ENV + RED: conflict ideology (+) vs. self-interest (–)	ENV > RED *RED: desirable but entails costs* *ENV: desirable and less group-specific economic costs*
Ideological position to the right	ENV – RED: conflict ideology (–) vs. self-interest (+)	RED > ENV *RED: undesirable, but direct benefits* *ENV: undesirable, less direct benefits*	RED – ENV –	ENV > RED *RED: undesirable and entails cost* *ENV: undesirable, but some utility*

Notes: RED = income redistribution; ENV = environmental protection.

Considering the expression of general preferences, respondents may experience cross-cutting conflicts: left-leaning, high-income citizens experience opposed pulls from ideology (in favor of redistribution) and self-interest (against redistribution), while right-leaning, low-income citizens face a conflict between ideology (against redistribution) and self-interest (in favor of redistribution). If citizens do not have to choose between redistribution and other policy goals, their ideological positions may trump their economic interests. They can support redistribution without potentially limiting the scope of their support for other, similarly positively evaluated goals (Armingeon and Weisstanner 2019). Table 1 outline these situations in a stylized manner, focusing on the broad dynamics behind preference formation and glossing over the possible variation in redistribution and environmental protection support within different income and ideological groups.

The logics in preference formation are quite different if, however, respondents are forced to choose between the two policies (i.e., in a constrained setting), some of them face a conflict between two goals that they hold dear. If self-interest wields more explanatory power than ideological orientation does, we expect left-leaning, low-income respondents to prefer redistribution to environmental protection. For them, redistribution is an excludable and rival (private) good, which has a direct and clear positive effect on their income. Environmental protection is a non-excludable and non-

rival (public) good, which is far less attractive than the private good. In contrast, left-leaning, high-income respondents face a conflict between a private good with positive ideological connotations but adverse personal economic effects (i.e. redistribution) and a cherished public good without negative individual economic effects (i.e. environmental protection). Respondents on the right side of the political spectrum are much less enthusiastic about both redistribution and environmental protection. If they are in the lower part of the income hierarchy, they prefer redistribution more than right-leaning, high-income respondents, since for them this policy is a private good with negative ideological connotations. For right-wing, high-income respondents, redistribution is a cost, which is also negatively evaluated on ideological grounds. Both groups are similar in their opposition to environmental protection since they doubt it is a positive public good, and they are ideologically opposed to that policy.

These considerations lead to the following hypothesis: If citizens face a trade-off between environmental protection and income redistribution, there is no reason to assume a significant correlation between ideology and choice in favor of either redistribution or environmental protection, unless all left-leaning respondents systematically consider one of the two goals superior.[6] Consequently, self-interest is the primary remaining explanatory variable in trade-off situations (see also Busemeyer and Garritzmann 2017), with low-income groups being relatively in favor of redistribution and high-income groups being relatively in favor of environmental protection:

H4: In an unconstrained setting, ideology trumps self-interest. In a constrained setting, self-interest trumps ideology.

[6] Arguably, left-leaning, low-income respondents may prefer redistribution in the trade-off setting while left-leaning, high-income respondents have a particular interest in environmental protection. Therefore, the interaction effects between ideology and income should be significant in trade-off situations. However, in this constrained setting, center-right-leaning citizens have a similar preference ordering, leading to an overall insignificant interaction effect between income and ideology.

Research Design

In order to test the hypotheses, we fielded an original survey in the German-speaking part of Switzerland in the summer of 2017. Intervista, a Swiss survey company, drew a representative sample of 1,027 respondents from an online access panel.[7] The sample was stratified with respect to age, gender, income, and party preference to match the adult population margins. The choice of Switzerland raises the question if our findings can be generalized to other countries. Arguably, support for redistribution in such a rich country could be lower than in other countries as most citizens are well-off, and environmental support could be particularly strong as there are more resources to spend on the environment. A survey analysis of the ISSP Role of Government 2016, however, shows that Switzerland is not an extreme case. Citizen's support for environmental protection and support for redistribution is similar in Belgium, Denmark, Germany, Spain, Sweden, or the UK.

Dependent Variables

We use four different dependent variables. The first two variables represent preferences in an unconstrained setting. In line with most of the literature, we capture individual *preferences for redistribution* with a question about whether „the government should reduce income differences in Switzerland." The scale is constructed around five options ranging from "strongly disagree" (1) to "strongly agree" (5). *Preferences for environmental protection* are captured by the degree of respondents' agreement with the statement "the government should reduce environmental pollution" and measured on the same five-point scale.

The two remaining dependent variables capture preferences in two different trade-off settings. The *importance trade-off* situation assesses the relative importance assigned to redistribution vis-a-vis environmental protection, using the answer to the following question: "How important is the topic of income inequality compared to environmental pollution?" Agreement is measured on a five-point scale, where higher values reflect a higher preference for environmental protection over redistribution. The *spending trade-off* situation is a simulated spending decision. We told respondents

[7] For an overview of the question order, see the SI.

that the Swiss Federation has recently booked a surplus of five billion Swiss Francs and that they can now decide on what they would like to spend the additional five billion. We asked them to allocate a total of five billion Swiss Francs to the following seven fields: inequality reduction (redistribution), healthcare costs reduction, immigration control, environmental protection, privacy protection, security enhancement, and unemployment reduction.[8] In order to assess this trade-off, we generate a variable measuring the difference between the total money assigned to environmental protection and the total money assigned to redistribution.[9] For the spending trade-off situation, we include a variable that controls for the total amount devoted to redistribution and environmental protection compared to the other five fields.

Objective Material Interest

As the theoretical discussion above suggests, we are interested in three main independent variables: information, ideology, and material interest. We operationalize material interest with an *objective income* measure following the approach developed by Fernandez-Albertos and Kuo (2018). In order to avoid priming our respondents about their place in the income distribution with pre-defined income intervals, we assigned respondents into custom-generated income deciles based on total monthly household income before taxes adjusted by the total number of household members. We estimated the income deciles and the corresponding nine cut-off points using EU-SILC microdata from 2014. We randomly selected one of these cut-off points to show respondents and asked if their household income was above or below this threshold. If a respondent's income was below (above) the threshold, we showed them a random lower (higher) cut-off point and asked them to indicate whether the household income was above or below it again (Figure A1 in the supplementary information (SI)). This procedure was repeated until a respondent's income decile could be clearly identified. We were able to assign 40% after three or fewer questions and 72% after four or fewer questions. We standardized the income

[8] Policies were selected to reflect the major worries of the Swiss population in 2017: unemployment, pensions, health, Europe, economy, environment, inflation, social security, migration (GFS 2017).

[9] Unemployment reduction is also a redistributive policy. We added money assigned to unemployment reduction and redistribution to our models in a robustness test, which did not alter any of our findings.

variable to a mean of 0 and a standard deviation of 1 to improve comparing effect magnitudes.

Information Treatments

To assess the role that *information* plays in preference formation, we posed two questions to all respondents. The first question asked respondents to estimate the share of households in Switzerland with an income higher than that of their household. Participants could choose a percentage between 1 and 99 percent. The second question asked them whether Switzerland was better, as good as, or worse at preserving biodiversity than other European countries. We selected biodiversity since it has become a major topic of the debate on environmental protection. It requires not only regulatory action but also significant spending (OECD 2019), and it is a policy field in which Switzerland performs poorly (SFC 2018), although citizens tend to think that Switzerland is a top achiever.

We randomly assigned respondents to four different groups: three treatment groups and one control group. The first group received an *income information treatment* where respondents were informed about their actual position in the income distribution. We showed them their estimates: "You indicated that [x] percent of Swiss households have an income higher than your own household's, and [1-x] percent earns a lower income". Then we informed them about their actual relative income: "In fact, according to data from the federal statistical office, your position in the income distribution is as follows: Roughly [z] percent of Swiss households have an income higher than your own household's, and [1-z] percent earns a lower income." If respondents had guessed their income decile correctly, they were informed of their correct estimate (Figure A2 and A3 in the SI).

The second treatment group received an *environmental information treatment.* Among all dimensions of environmental protection, we picked biodiversity because it is high on the environmental policy agenda and because 84% of our respondents erroneously believe that Switzerland is doing at least as well in this policy field as other European nations.[10] After asking them to rank Switzerland on the success of its biodiversity

[10] For more information: https://www.eea.europa.eu/themes/biodiversity (accessed 04.02.2020).

efforts, we informed respondents of the actual ranking: "You are [right, wrong]. A new study of the European Environment Agency shows that, of all European countries, Switzerland has the lowest share of areas designated for biodiversity protection." The third treatment group received both the *income and the environmental information treatment*. Finally, respondents in the *control group* did not receive any information.

Ideology and Control Variables

We use respondents' self-placement on an 11-point left-right scale as the main measure of ideology. Zero indicates left and 10 indicates right. We again standardized the variable to have a mean of 0 and a standard deviation of 1. To assess the interaction effect between ideology and income, we use a binary ideology variable where we coded individuals placing themselves between 0 and 3 as "left" and the rest as "center-right." About 30% of the respondents place themselves on the "left", which equals the overall left-wing vote share in Switzerland. Using three ideological groups (left-center-right) does not alter our substantive findings (Figure A11 in the SI). Finally, we include a battery of control variables: age, gender, number of household members, union membership, education (primary and lower secondary, upper secondary, tertiary), and marriage status (dummy).

Results

We seek to explain the dynamics behind individual preference formation for different positively rated policies through a quantitative analysis. To improve the interpretation of statistical results, we use OLS regressions. Assuming that the dependent variable is not interval but only ordinal, we also estimated ordered logistic regression and tested for the parallel regression assumption. These results do not alter our substantive findings (Table A2 and A3 in the SI). Descriptively, both redistribution and environmental protection are highly popular policies in an unconstrained setting (Figure A4 in the SI). In trade-off situations, we find a less skewed distribution and slightly higher importance or slightly more money assigned to environmental protection over redistribution. These constrained settings where citizens face a choice capture the reality of modern policymaking in times of limited resources more accurately.

Our previous theoretical discussion suggests that if respondents were informed of their actual position in the income distribution and/or the actual level of environmental protection in Switzerland, they would support redistribution and environmental protection efforts more. However, our results show that information significantly affects respondents' preferences neither in the constrained, nor in the unconstrained setting (Table A1 in the SI). None of the three information treatments display a significant effect. This finding may seem surprising in light of information's positive effect on policy preferences that other studies have recently reported. Studies with similar experimental settings discussed in the theoretical part, however, have come to the same conclusions.

To further test whether the direction and intensity of information affects preferences, we calculated the difference between perceived and actual status. This is especially important for the income information treatment. Low-income respondents tend to think they are better-off and high-income individuals assume they are worse-off, and for some, the extent of income misperception is particularly high (Figure A5 and A6 in the SI). The environmental information treatment can only go in one direction. Only 16% of the respondents were right that Swiss biodiversity protection is worse compared to other European countries, while 38% thought Switzerland is doing equally good and 46% that she is doing better (Figure A7 in the SI). However, Figure 1 shows that all of the interaction effects between the information treatments and the income and biodiversity misperception are not significant.

Because some studies have emphasized the importance of differential information treatment effects, we also investigated if information treatments depend on respondents' political interest, education, level of political activism, ideology, and self-interest (income). However, the tests did not unearth any significant relationships (Figure A8 and A9 in the SI).[11] We can thus reject our first hypothesis about the decisive role of information in policy preference formation. This experiment does not provide empirical support to the assumption that pertinent information is taken in mind by citizens who then adjust their policy preferences after weighing in arguments and data.

[11] The small significant interaction effect between the income information treatment and the degree of misperception among poorer respondents is an extrapolation from the data (see Figure A10).

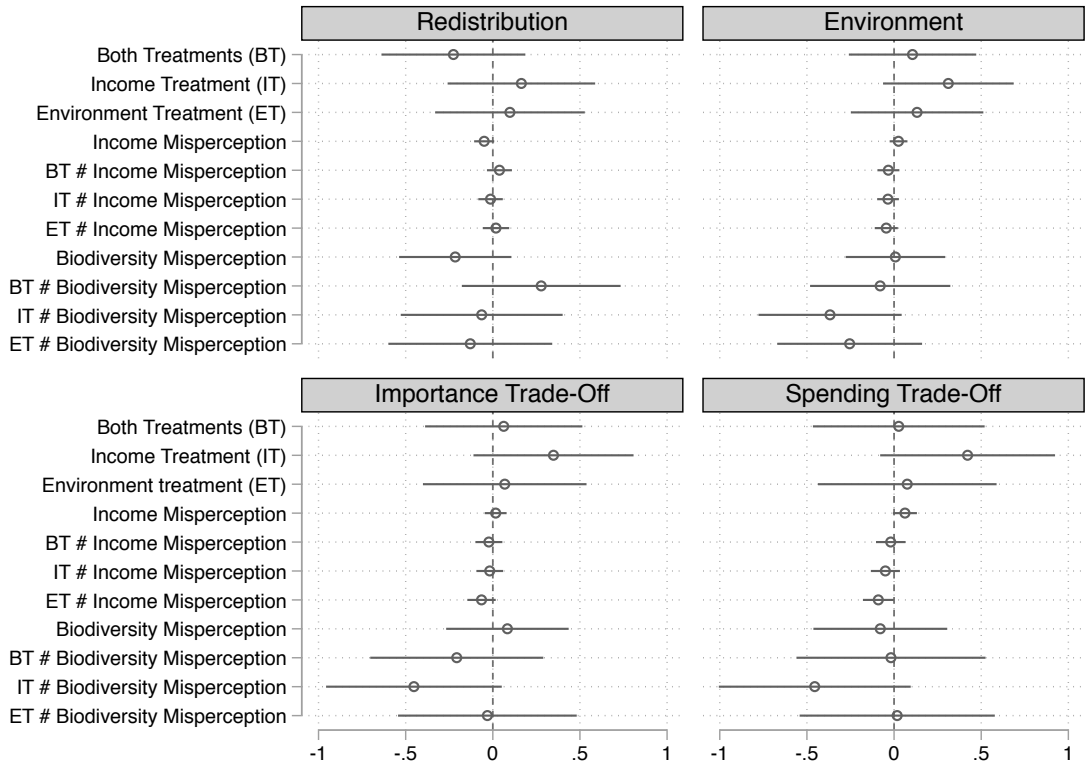

Figure 1: Interaction between information treatments and misperception

Notes: Information treatment, income misperception, biodiversity misperception, and their interaction coefficients with 95% confidence intervals; OLS regressions with the same covariates as in Table A1.

As far as the role of ideology and self-interest in an unconstrained setting is concerned, Figure 2 displays predicted support for redistribution and environmental protection along the left-right scale and the income deciles. We find that the more a respondent leans to the right of the ideological scale, the less she supports redistribution and environmental protection. On the other hand, income has a negative effect on preferences towards redistribution, but it does not seem to have a significant effect on preferences towards environmental protection. It clearly shows that more left-leaning respondents more strongly support redistribution and environmental protection.

Moving to the determinants of policy preferences in constrained settings.[12] Figure 2 shows that both ideology and self-interest matter in the importance trade-off setting.

[12] The explanatory power of the constrained models is lower than that of the unconstrained models, likely because trade-off questions are more challenging and, thus, the share of random responses is higher.

The more we move away from unconstrained preferences toward harder, spending trade-offs preferences, the more ideology loses significance. At the end of the continuum, the only statistically relevant effect on policy preferences is the positive effect of income. In this regard, the model of soft constraints is in a middle position. Thus, material self-interest trumps ideology in highly constrained settings.

The interaction between income and ideology in unconstrained and constrained settings emphasizes this point (Table A4 in the SI). Figure 3 displays predicted preference values at different income levels for center-right compared to left-wing respondents. While there is a significant interaction between income and ideology in the unconstrained settings, the interaction is no longer significant in the constrained settings our survey simulates. For each income decile, there is no significant difference in the levels of importance and spending by left and center-right respondents.

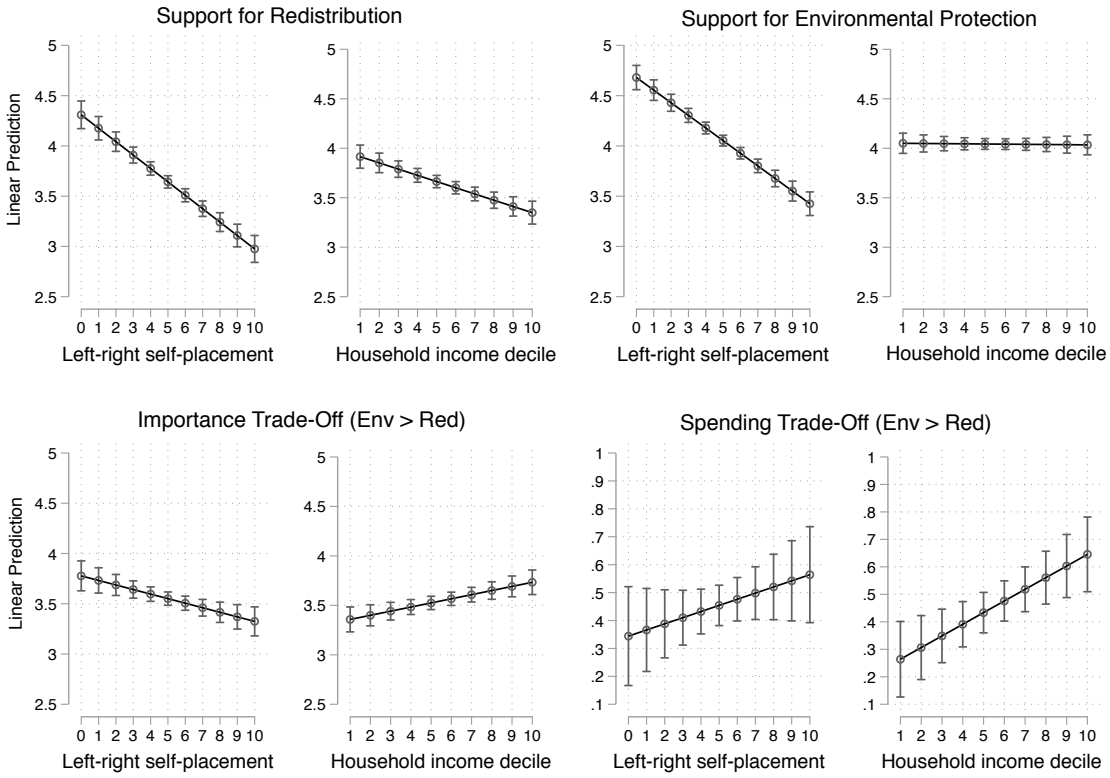

Figure 2: Predicted values of individual policy preferences at different levels of income and ideology in unconstrained and constrained settings

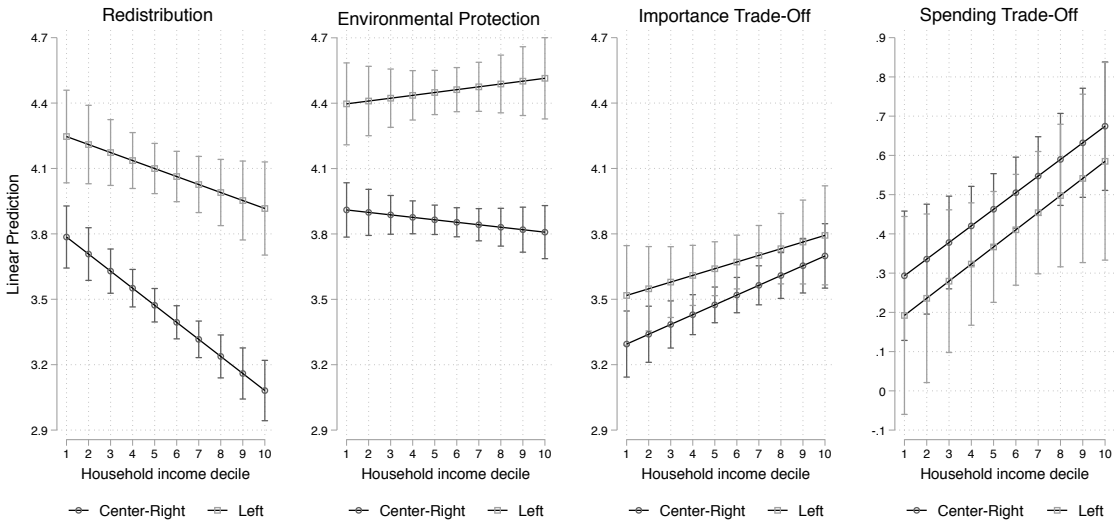

Figure 3: Interaction effects between ideology and income on policy preferences

To conclude, whereas material self-interest and ideology are important determinants of preferences towards redistribution and environmental protection in an unconstrained setting, ideology starts to lose explanatory power in constrained settings. The level of significance of ideology decreases in importance trade-offs only to completely disappear in spending trade-offs. Material self-interest seems to be the only variable that matters under such circumstances.

Conclusion

This study has examined how voters decide *between* policies that they otherwise support. More specifically, we have investigated how information, ideology, and self-interest shape preferences in unconstrained and constrained settings. Our results suggest that information does not play a significant role in individuals' preference formation and that ideology and self-interest are important predictors of preferences towards redistribution and environmental protection in an unconstrained setting. Once respondents face a trade-off between the two policies, however, self-interest emerges as the primary explanatory variable of individual preferences that trumps the role of ideology. The non-finding regarding ideology in trade-off situations should be tested in future studies using more fine-grained measures of ideology besides the self-placement on the left-right scale.

Issues related to our information treatment are major concerns that could be levied against the design of our experiment. Learning may depend on repeated exposure to the new information, the specific content of the new information may be amplified by a normative framing, and respondents may need to receive this information from particularly trustworthy actors to absorb it properly. While we agree with these qualifications, we think that our information cues are strong and simple, and they come from trustworthy public offices. If citizens are unable to use such information and need further repetition and bolder framing by different actors, this inability raises severe concerns about ordinary citizens' learning capacity– and this is precisely our point.

The distinction between unconstrained settings, in which general ideological inclinations shape preferences, and trade-off settings where self-interest tends to determine policy preferences is one of the core insights generated by this study. This difference is politically important and points to the strong institutional effects that underlie democratic policymaking. Typically, general elections come close to simulating an unconstrained setting. In such a context, citizens mandate that political parties and politicians implement their general preferences without being forced to consider the side effects, costs simultaneously, and the consequences of bringing these preferences to fruition. In contrast, constrained settings entail that the decision in favor of one option is, at the same time, a decision against another option. Typically, this is the case with specific policy choices taken either in parliament or in popular votes on public policies. By implication, an electoral choice by a citizen does not lead to the same policy outcomes that a direct democratic choice by the same citizen would produce.

For left-libertarian parties trying to attract voters with pro-redistributive and pro-environmental positions, our analysis offers two speculative insights: In electoral campaigns, the winning formula for such parties is to demand both redistribution and environmental protection. A crucial precondition is to avoid any commitment about which policy will be supported if fiscal resources do not allow to finance both. In direct democratic votes, environmental and redistributive projects are typically separated and, hence, parties could support each proposal in its separate campaign. Difficulties arise if environmental and redistributive policies are pitted against each other in a

single direct democratic vote. In such a case, considering our findings, if vote maximization is their primary goal, these parties should support redistribution if their core electorate is at the lower end of the income distribution, and environmental protection if the core electorate is nearer to the top of the income hierarchy.

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Supplementary Information

Trade-Offs Between Redistribution and Environmental Protection: The Role of Information, Ideology, and Self-Interest

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Forthcoming in Journal of European Public Policy.

6 April 2020

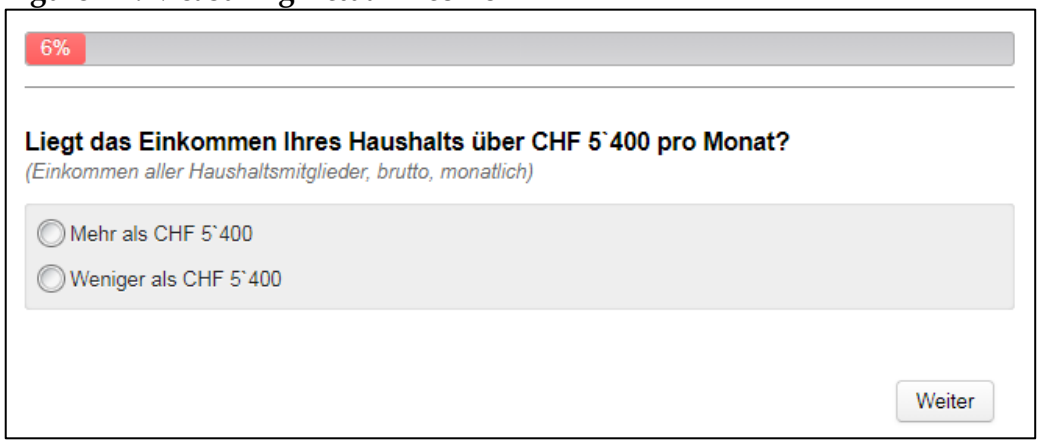
S.1 Survey Questionnaire Order

Structure of the survey questions:

1. Household size
2. Gross income
3. Importance of policy fields
4. Should the political system do more, the same or less in the policy fields listed under 3?
5. Perceived income (Share of households earning higher income)
6. Treatment: Information about actual income situation
7. Biodiversity in Switzerland. Better, same, worse as in other European countries?
8. Treatment: Information about actual achievements in biodiversity in Switzerland
9. Preference for redistribution
10. Preference for redistribution via taxes
11. Perception of political parties and interest organizations in the field of income redistribution
12. Potential political coalitions for projects to reduce income inequality
13. Preferences for reduction of environmental pollution in Switzerland
14. Perception of political parties and interest organizations in the field of environmental policy
15. Importance of income inequality as compared to other policy fields
16. Allocation of a surplus of Federal budget on seven policy fields
17. Political interest and participation
18. Union membership
19. Position on the left-right scale

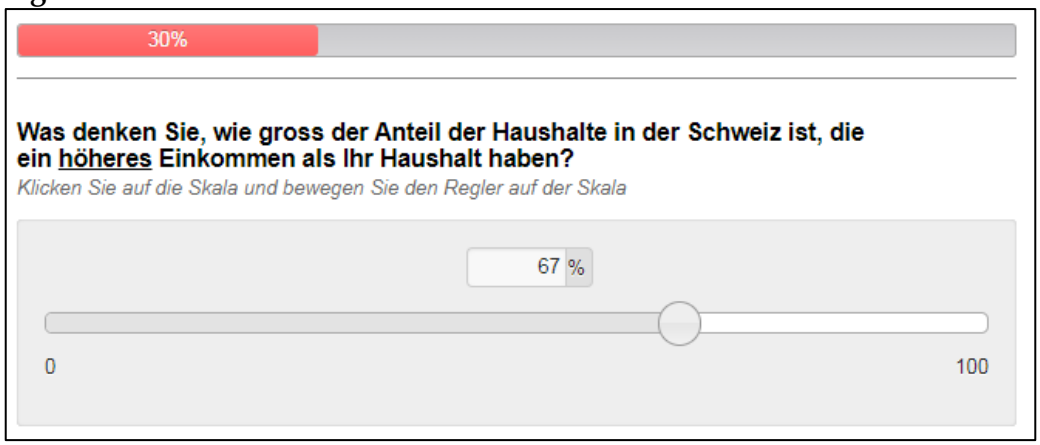
S.2 Questionnaire design (screenshots)

Figure A1: Measuring Actual Income



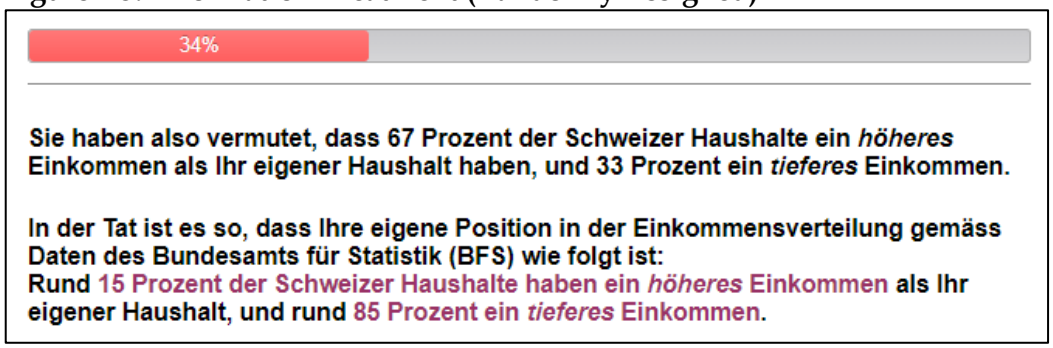
Translation: Is your household income above 5'400 CHF per month?

Figure A2: Estimation of Perceived Income



Translation: What do you think, how big is the share of households in Switzerland that have a higher household income than you?

Figure A3: Information Treatment (Randomly Assigned)



Translation: You indicated that 67 percent of Swiss households have an income higher than your own household's, and 33 percent earn a lower income. In fact, according to data from the federal statistical office, your own position in the income distribution is as follows: Roughly 15 percent of Swiss households have an income higher than your own household's, and 85 percent earn a lower income.

S.3 Additional Figures and Tables

Table A1: The role of information, ideology, and material interest in preference formation

	Redist.	Envir.	Importance Trade-off	Spending Trade-off
Ref: no treatment				
Both Treatments	0.016	0.041	-0.107	0.004
	(0.089)	(0.078)	(0.096)	(0.106)
Income Treatment	0.115	0.001	-0.030	0.030
	(0.089)	(0.078)	(0.096)	(0.105)
Environment Treatment	-0.014	-0.090	0.034	0.076
	(0.089)	(0.078)	(0.096)	(0.105)
Left-Right (std.)	-0.344***	-0.323***	-0.117***	0.057
	(0.032)	(0.028)	(0.034)	(0.042)
Income (std.)	-0.181***	-0.005	0.120***	0.122**
	(0.032)	(0.028)	(0.035)	(0.038)
Age	-0.001	0.002	0.011***	0.004
	(0.002)	(0.002)	(0.002)	(0.003)
Female	0.182**	-0.004	0.226**	-0.053
	(0.064)	(0.056)	(0.069)	(0.075)
Household Size	0.004	0.011	0.002	-0.007
	(0.032)	(0.028)	(0.035)	(0.038)
Union member	0.251**	0.064	0.059	-0.002
	(0.088)	(0.077)	(0.094)	(0.103)
Ref: pri+low sec educ.				
Upper Sec. Education	0.114	0.071	0.126	-0.034
	(0.101)	(0.087)	(0.107)	(0.117)
Tertiary Education	0.043	0.081	-0.074	-0.044
	(0.109)	(0.095)	(0.117)	(0.128)
Married	-0.169*	-0.072	0.056	0.090
	(0.079)	(0.069)	(0.085)	(0.093)
Tot. Amount Red./Env.				0.199***
				(0.036)
Constant	3.500***	3.884***	2.851***	-0.059
	(0.183)	(0.159)	(0.196)	(0.224)
R^2	0.18	0.13	0.07	0.04
N	949	966	967	971

*Notes: * p<0.05; ** p<0.01; *** p<0.001; OLS regression coefficients with standard errors in parentheses.*

Table A2: Ordered Logistic Regressions (Replication of Table A1)

	Redist.	Envir.	Importance Trade-off	Spending Trade-off
Ref: no treatment				
Both Treatments	0.055	0.180	-0.204	0.004
	(0.172)	(0.175)	(0.167)	(0.106)
Income Treatment	0.258	-0.021	-0.025	0.030
	(0.171)	(0.173)	(0.166)	(0.105)
Environment Treatment	-0.005	-0.127	0.037	0.076
	(0.171)	(0.173)	(0.164)	(0.105)
Left-Right (std.)	-0.684***	-0.761***	-0.201***	0.057
	(0.066)	(0.068)	(0.061)	(0.042)
Income (std.)	-0.358***	0.008	0.228***	0.122**
	(0.063)	(0.063)	(0.060)	(0.038)
Age	-0.005	0.007	0.019***	0.004
	(0.004)	(0.004)	(0.004)	(0.003)
Female	0.278*	-0.004	0.369**	-0.053
	(0.123)	(0.125)	(0.119)	(0.075)
Household Size	0.009	0.051	0.013	-0.007
	(0.064)	(0.064)	(0.061)	(0.038)
Union member	0.515**	0.226	0.125	-0.002
	(0.176)	(0.177)	(0.167)	(0.103)
Ref: pri+low sec educ.				
Upper Sec. Education	0.232	0.156	0.193	-0.034
	(0.193)	(0.192)	(0.189)	(0.117)
Tertiary Education	0.132	0.260	-0.145	-0.044
	(0.210)	(0.212)	(0.207)	(0.128)
Married	-0.362*	-0.284+	0.083	0.090
	(0.152)	(0.155)	(0.147)	(0.093)
Tot. Amount Red./Env.				0.199***
				(0.036)
Constant				-0.059
				(0.224)
R^2	0.07	0.07	0.03	0.04
N	949	966	967	971

*Notes: + p<0.1; * p<0.05; ** p<0.01; *** p<0.001; first three models show ordered logistic regression coefficients and the fourth model shows OLS regression coefficients with standard errors in parentheses. Cut-off points not shown.*

Table A3: Ordered Logistic Regressions (Replication of Table A4)

	Redist.	Envir.	Importance Trade-off	Spending Trade-off
Ref: no treatment				
Both Treatments	0.053	0.174	-0.204	0.003
	(0.172)	(0.175)	(0.167)	(0.106)
Income Treatment	0.262	-0.024	-0.025	0.031
	(0.171)	(0.174)	(0.166)	(0.105)
Environment Treatment	0.000	-0.119	0.037	0.079
	(0.171)	(0.173)	(0.164)	(0.105)
Left-Right (std.)	-0.062	0.097*	0.081+	0.060*
	(0.049)	(0.049)	(0.046)	(0.029)
Income (std.)	-0.198***	-0.199***	-0.076	0.041
	(0.053)	(0.052)	(0.050)	(0.031)
Income X Left-Right	-0.012	-0.018*	-0.000	-0.003
	(0.008)	(0.008)	(0.008)	(0.005)
Age	-0.005	0.007	0.019***	0.004
	(0.004)	(0.004)	(0.004)	(0.003)
Female	0.276*	-0.006	0.369**	-0.053
	(0.123)	(0.125)	(0.119)	(0.075)
Household Size	0.008	0.045	0.013	-0.007
	(0.063)	(0.064)	(0.061)	(0.038)
Union member	0.522**	0.243	0.125	0.001
	(0.176)	(0.177)	(0.167)	(0.104)
Ref: pri+low sec educ.				
Upper Sec. Education	0.225	0.156	0.193	-0.033
	(0.193)	(0.192)	(0.189)	(0.117)
Tertiary Education	0.127	0.265	-0.145	-0.042
	(0.210)	(0.212)	(0.207)	(0.128)
Married	-0.375*	-0.292+	0.083	0.087
	(0.152)	(0.156)	(0.147)	(0.093)
Tot. Amount Red./Env.				0.198***
				(0.036)
Constant				-0.501+
				(0.297)
				0.05
R2	949	966	967	971

*Notes: + p<0.1; * p<0.05; ** p<0.01; *** p<0.001; first three models show ordered logistic regression coefficients and the fourth model shows OLS regression coefficients with standard errors in parentheses. Cut-off points not shown.*

Table A4: Interaction of Political Ideology and Income

	Redist.	Envir.	Importance Trade-off	Spending Trade-off
Ref: no treatment				
Both Treatments	0.015	0.039	-0.107	0.003
	(0.089)	(0.078)	(0.096)	(0.106)
Income Treatment	0.118	0.002	-0.030	0.031
	(0.088)	(0.078)	(0.096)	(0.105)
Environment Treatment	-0.006	-0.083	0.033	0.079
	(0.089)	(0.078)	(0.096)	(0.105)
Income	-0.023	0.036+	0.036	0.060*
	(0.024)	(0.021)	(0.026)	(0.029)
Left (dummy)	-0.091***	-0.086***	-0.051+	0.041
	(0.026)	(0.023)	(0.028)	(0.031)
Left X Income	-0.008+	-0.007*	0.001	-0.003
	(0.004)	(0.004)	(0.004)	(0.005)
Age	-0.001	0.002	0.011***	0.004
	(0.002)	(0.002)	(0.002)	(0.003)
Female	0.183**	-0.004	0.226**	-0.053
	(0.064)	(0.056)	(0.069)	(0.075)
Household Size	0.004	0.011	0.002	-0.007
	(0.032)	(0.028)	(0.035)	(0.038)
Union member	0.258**	0.071	0.058	0.001
	(0.088)	(0.077)	(0.095)	(0.104)
Ref: pri+low sec educ.				
Upper Sec. Education	0.112	0.073	0.126	-0.033
	(0.100)	(0.087)	(0.107)	(0.117)
Tertiary Education	0.045	0.087	-0.074	-0.042
	(0.109)	(0.095)	(0.118)	(0.128)
Married	-0.175*	-0.079	0.057	0.087
	(0.079)	(0.069)	(0.085)	(0.093)
Tot. Amount Red./Env.				0.198***
				(0.036)
Constant	4.308***	4.326***	2.882***	-0.501+
	(0.237)	(0.208)	(0.256)	(0.297)
R^2	0.18	0.14	0.07	0.05
N	949	966	967	971

Notes: + $p<0.1$; * $p<0.05$; ** $p<0.01$; *** $p<0.001$; OLS regression coefficients with standard errors in parentheses.

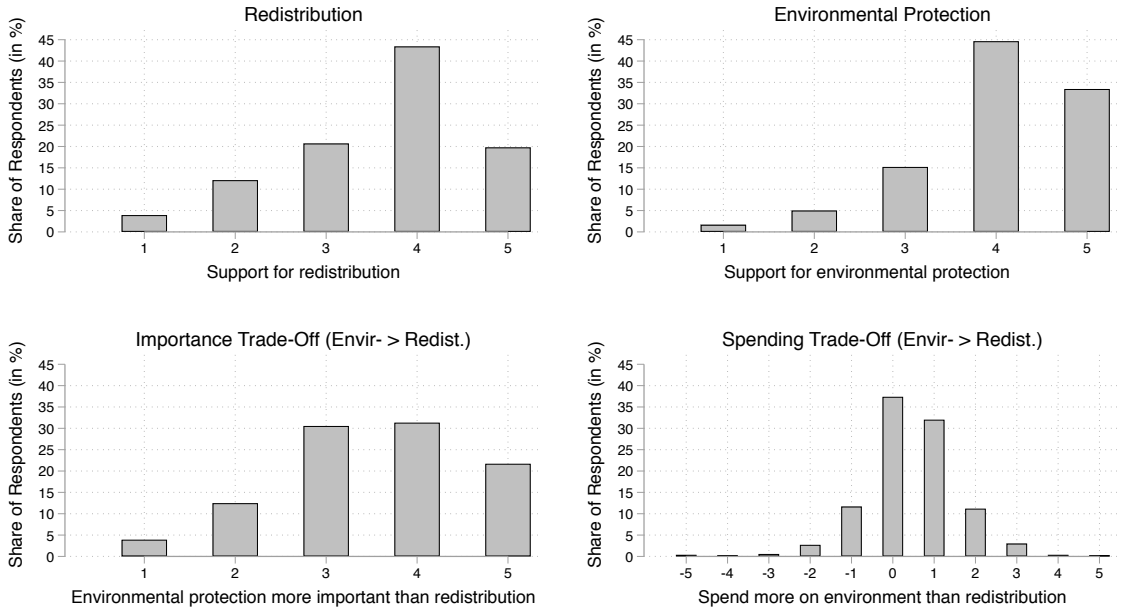


Figure A4: Preference distributions in constrained and unconstrained settings

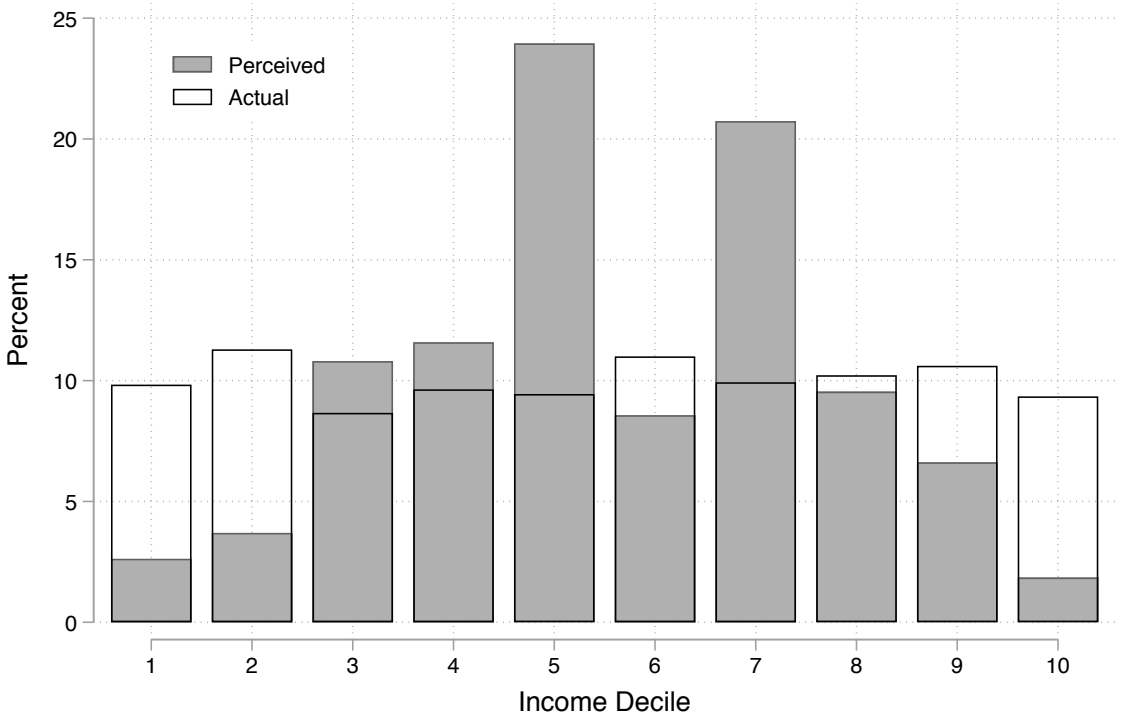


Figure A5: Distribution of Perceived and Actual Income Position

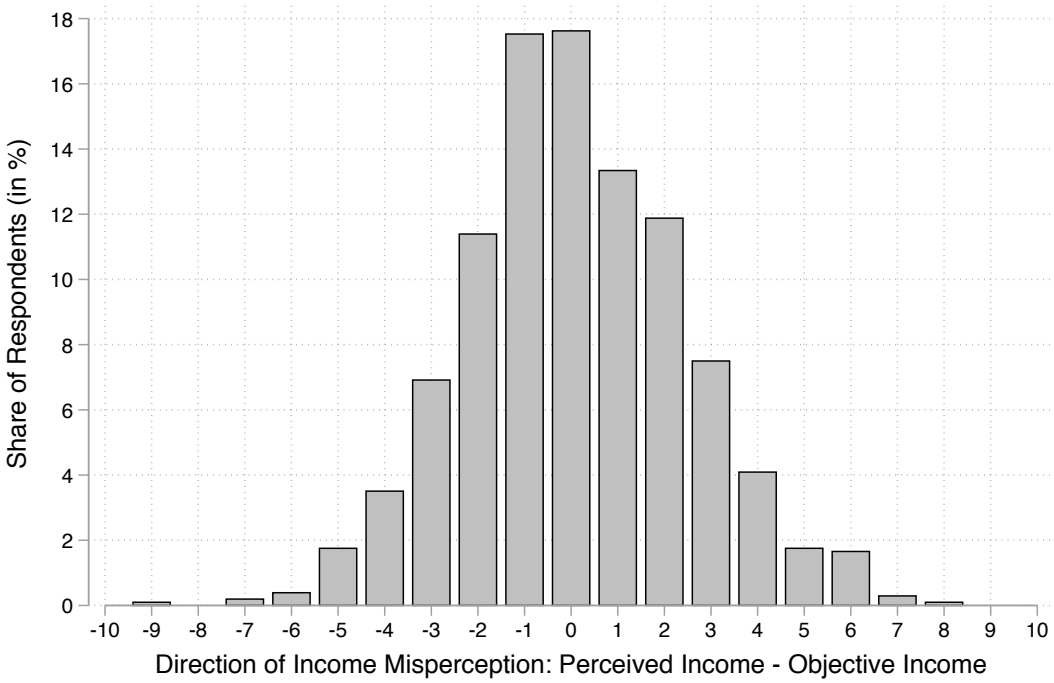


Figure A6: Intensity of Income Misperception

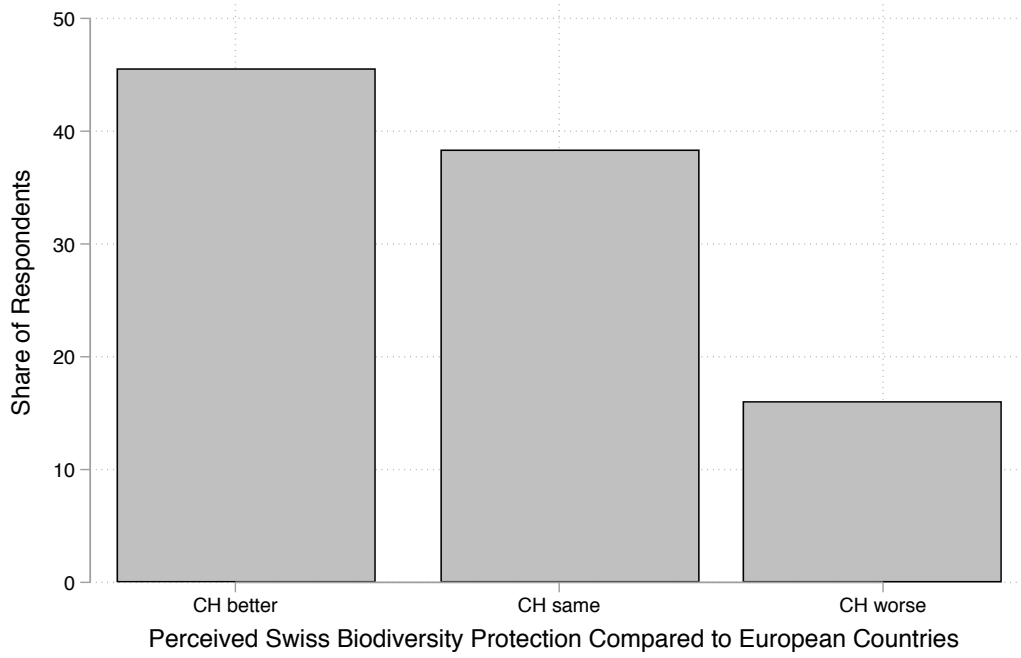


Figure A7: Perceived Swiss Biodiversity Protection Compared to European Countries

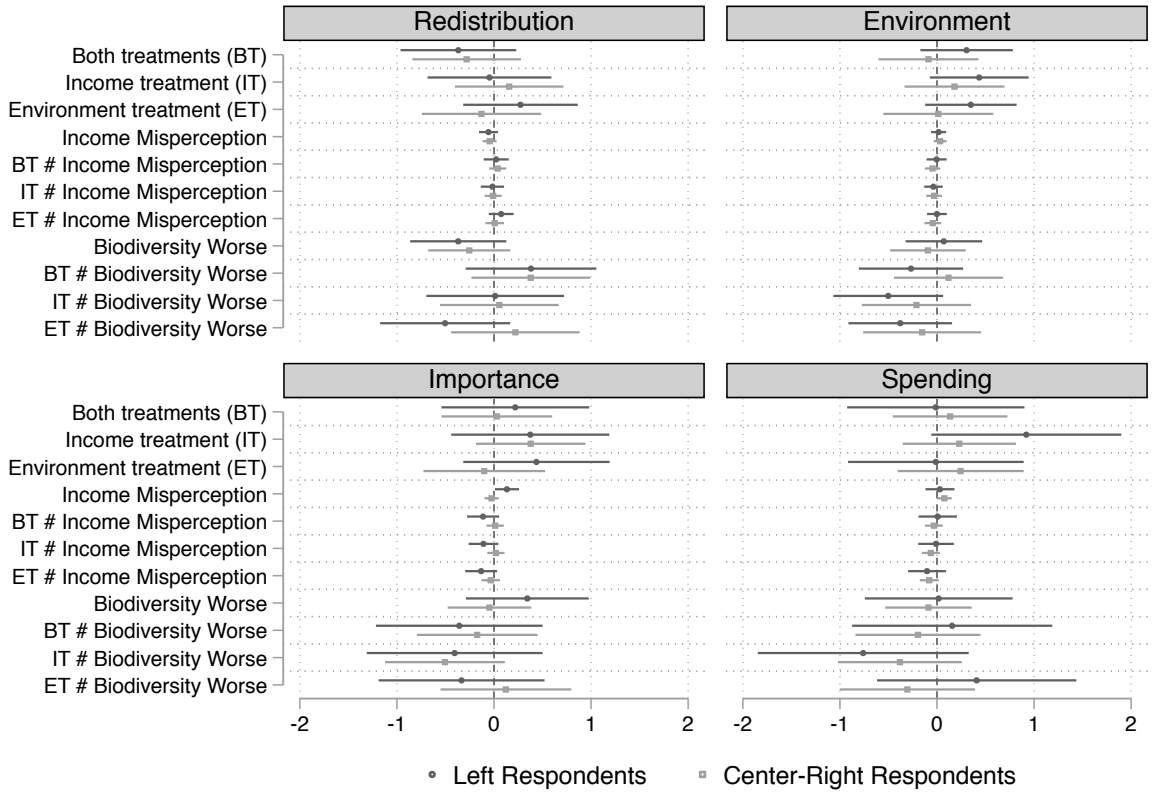


Figure A8: Interaction effects of information treatments and misperception for left and center-right respondents

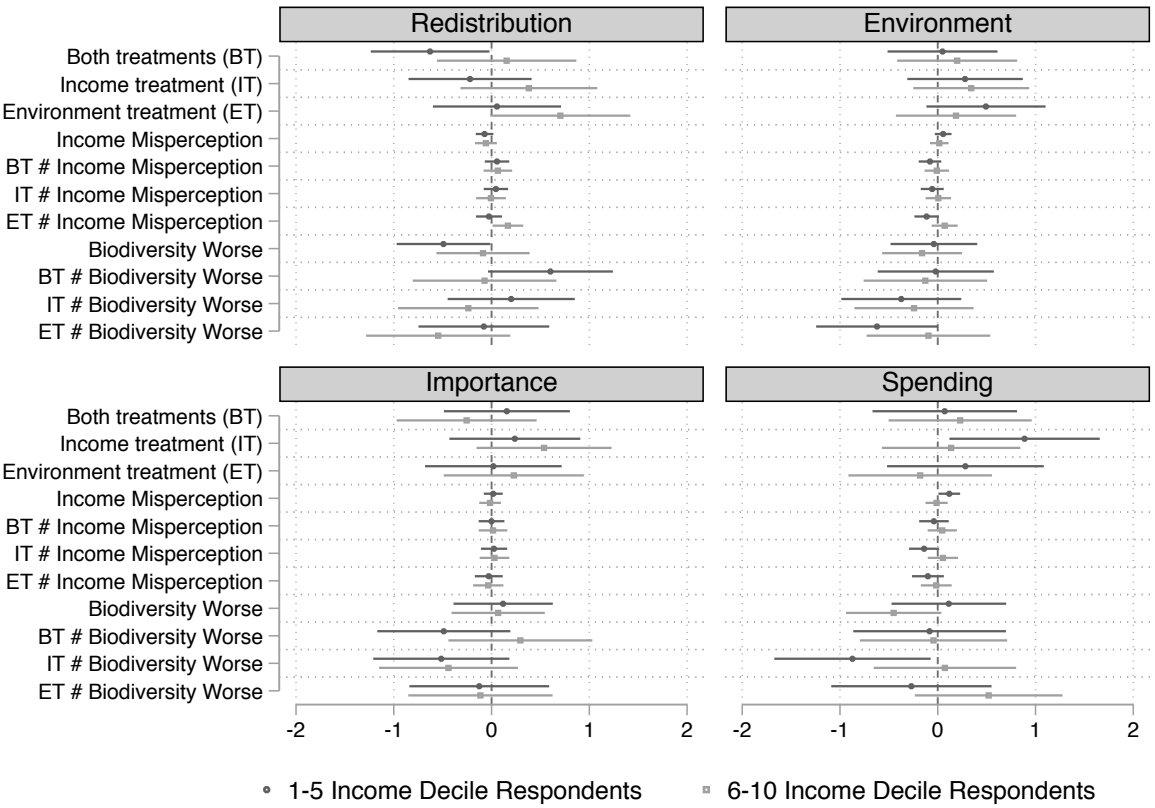


Figure A9: Interaction effects of information treatments and misperception for poorer and richer respondents

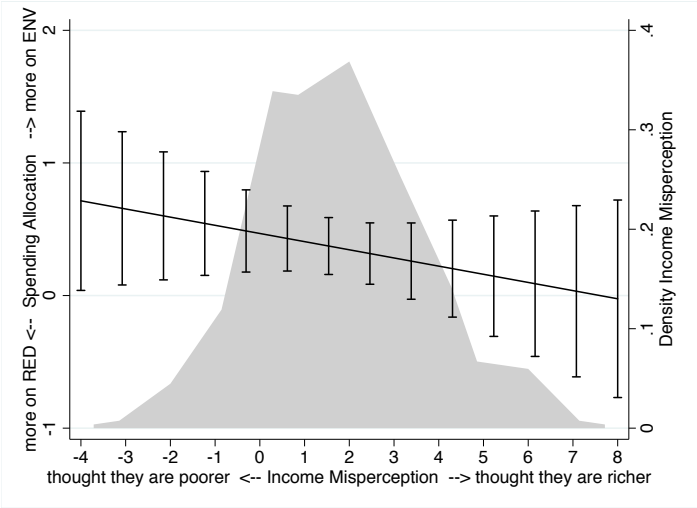


Figure A10: Predicted Values for Income Information Treated Poorer Respondents

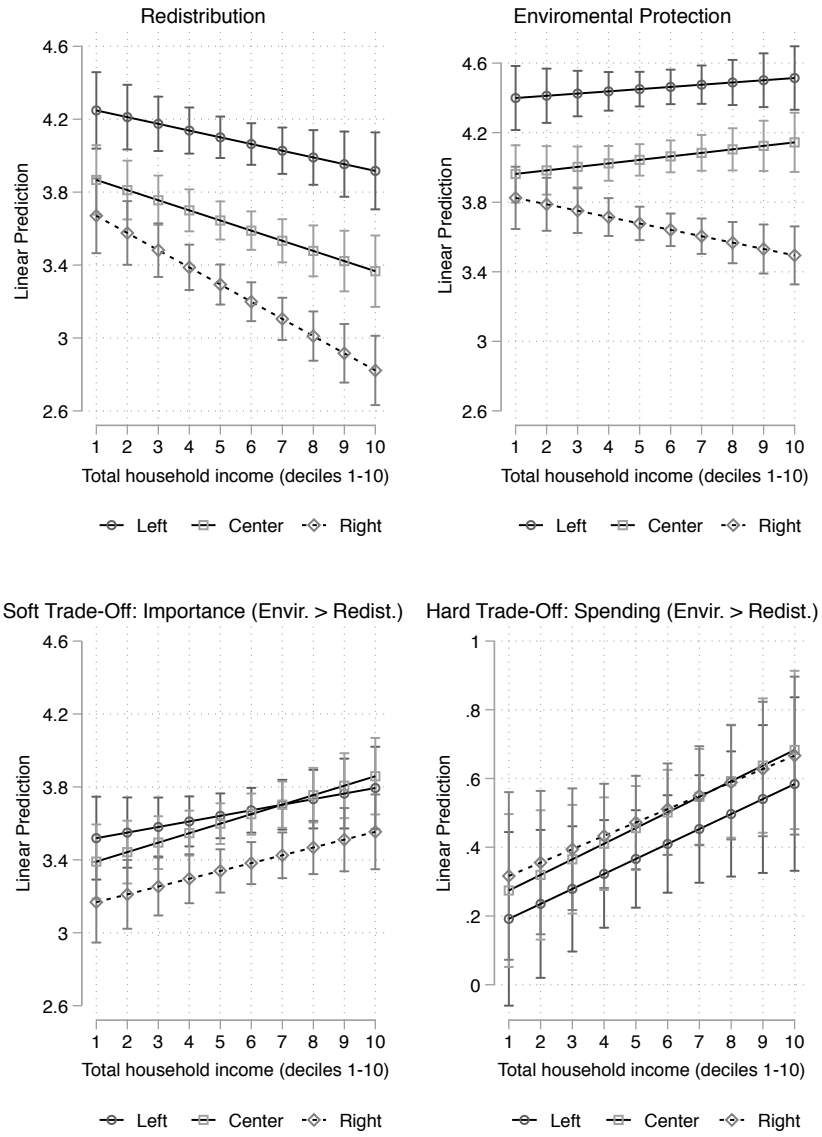


Figure A11: Replication of Figure 4 with Three Ideological Groups