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ABSTRACT
Few studies have analysed the effect of political engagement on legislators' responsiveness. This article focuses on opinion leaders defined as citizens who regularly discuss politics and who attempt to persuade others to change their viewpoint. It investigates whether opinion leaders are better represented compared to other voters. Taking advantage of the Swiss institution of direct democracy, the article combines roll-call votes and information from popular votes to compare the voting behaviour of legislators and citizens on exactly the same policy proposals. It thus overcomes limitations pertaining to the lack of identical information on elites' and citizens' preferences that is common in the literature. The findings show that opinion leaders are better represented than the rest of the electorate in those instances where both sub-groups disagree, and that issue salience does not increase responsiveness to rank-and-file voters. These findings have important implications for understanding unequal representation.

KEYWORDS Unequal representation; legislative behaviour; opinion leaders; Switzerland

There is a long research tradition investigating whether citizens as a whole influence political decision-making (see e.g. Wlezien and Soroka 2007). More recently, scholars have started to look at the representation gap between different sub-constituencies. These studies show that the preferences of low-resource groups such as racial minorities, the poorly educated, the poor or female citizens are less well represented in established democracies (Gilens 2012; Griffin and Newman 2007; Lefkofridi *et al.* 2012; Wuest and Lloren 2014), although the debate is still ongoing (Ellis *et al.* 2006).

Strategically, legislators or parties seeking re-election have greater incentives to focus on satisfying citizens who turn out to vote rather than citizens who do not (Bartels 1998; Fiorina 1974). For instance, Griffin and Newman (2005) show that senators who are running for re-election are more attentive to the preferences of voters than senators who are retiring or whose terms are almost complete. Based on this argument, legislators seeking re-election might have more incentive to respond to the needs and preferences of voters who are politically engaged and active because they are more likely to follow electoral campaigns than rank-and-file voters. Along these lines, we investigate whether opinion leaders, defined as voters who frequently discuss political matters and

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engage in political persuasion, are better represented than rank-and-file voters. Focusing on opinion leaders is of particular importance for our understanding of unequal representation. This group diffuses political messages across society and is therefore central to the representation process (Lazarsfeld *et al.* 1968; Shah and Scheufele 2006).

In order to evaluate our argument, we take advantage of the Swiss institution of direct democracy. Exploiting this unique context, we combine roll-call data with information on citizens' voting behaviour, political knowledge, legislators' educational attainment, and the intensity of voting campaigns. Based on this dataset, we first use citizens' popular votes to assess whether opinion leaders hold distinct preferences compared to the rest of the electorate. We then examine differences in the responsiveness of legislators by comparing the revealed policy preferences of voters and members of parliament (MPs) for exactly the same proposals. In addition, we perform a series of sensitivity analyses to control for factors that could confound our results. This research strategy allows us to use almost 100 policy proposals to assess whether legislators disproportionately respond to the preferences of opinion leaders. Our results qualify findings from previous studies and show that the two sub-groups only marginally differ with regard to their political preferences. However, we find that opinion leaders are better represented than rank-and-file voters in those instances where they disagree. Moreover, our results suggest that legislative responsiveness is not a function of issue salience. These findings thus have important implications for our understanding of unequal representation.

The article starts with a brief review of the literature on unequal representation. The following sections then present the data, the research strategy, and the empirical results, before the final concluding section.

Democratic responsiveness and opinion leaders

Many scholars claim that political participation mediates democratic responsiveness. In particular, Verba (1995: 1–2) argues that 'if some citizens are invisible, one cannot respond to them ... democratic responsiveness depends on citizen participation, and equal responsiveness depends on equal participation'. Two potential mechanisms explain the (participation) gap in representation. First, the voices of politically active citizens are heard more because they are more likely to communicate their preferences to political elites. Electoral participation enables citizens to choose like-minded politicians for office, or in parliamentary democracies to select the party whose platform is closest to their ideological (or policy) preferences. However, citizens can also communicate their views through other channels. For instance, citizens can email their representatives, attend public meetings, or donate money to partisan organisations. Political activities ensure that politicians are informed about citizens' needs and preferences – a precondition for substantive representation. Research shows

that opinion leaders – the focus of our study – are particularly active in politics: compared to non-leaders, they are more likely to vote, join a political party, attend political meetings, and volunteer in various types of associations (Adams and Ezrow 2009; Shah and Scheufele 2006). Thus, representatives are likely to be better informed about opinion leaders' preferences. As a result, we expect MPs to represent opinion leaders better than other voters.

Second, policy-makers, who can be individual actors such as MPs or collective actors such as political parties or governments, may be more attentive to politically active citizens because they want to stay in office. Legislators seeking re-election have greater incentives to respond to the preferences of citizens who turn out to vote rather than to the needs of citizens who abstain or rarely vote (Bartels 1998; Fiorina 1974; Griffin and Newman 2005). They might also have incentives to respond disproportionately to the preferences of voters who are opinion leaders, since this sub-group of voters tends to be more attentive to electoral campaigns. According to the two-step flow of communication model (Lazarsfeld *et al.* 1968), opinion leaders operate as a central linkage between political elites and ordinary citizens. They disseminate information and political messages across society through membership groups (family, friends, work, etc.). Likewise, Miller and Stokes (1963) have suggested that opinion leaders are more likely to be aware of legislative voting records and 'in close contests, make the difference between victory or defeat ... as they serve as gatekeepers and conveyors of evaluation' (Eulau and Karps 1977: 236). Opinion leaders thus influence public opinion at an interpersonal level and may 'have particular sway over fellow citizens' reactions to political issues, setting agendas through a two-step flow [of communication]' (Shah and Scheufele 2006: 3). Based on this argument, political elites may be more responsive to opinion leaders because this sub-group of the electorate plays an important role as a broker between policy-makers and rank-and-file voters.

Both mechanisms implicitly assume that individuals who participate more in politics, such as opinion leaders, hold different preferences compared to politically less active citizens. If citizens' preferences do not vary according to their degree of political engagement, there is no basis for any representation gap. Previous findings about the heterogeneity of policy preferences are, however, inconclusive. On the one hand, a number of studies indicate that opinion does not vary according to political engagement. Along these lines, some scholars argue that voters and non-voters often hold similar preferences, particularly on some issues such as foreign policy (Bennett and Resnick 2010; Ellis *et al.* 2006). According to Highton and Wolfinger (2001: 192), this can be explained by the fact that non-voters constitute a heterogeneous group composed of poor, less educated, female, mostly young and residentially mobile citizens. Other research shows that individuals who are less interested and less active in politics typically display less stable and consistent opinion patterns (Lutz 2007; Zaller 1992). Therefore, their revealed preferences must be considered with care since

these citizens would often change their views if they were to participate more in politics (Grofman *et al.* 1999).

Based on the finding that aggregate preferences of voters and non-voters differ only marginally, Ellis *et al.* (2006) challenge the notion that citizens who participate more actively in the political process are better represented by policy-makers. Using a dynamic representation model, they do not find that US legislators' voting behaviour is biased against citizens who abstain. Hill and Hurley (1979) present similar findings. They test whether high turnout rates increase congruence between representatives and citizens within districts. They conclude that electoral participation does not affect attitudinal agreement between congressmen and their constituents.

On the other hand, several studies show that politically engaged individuals hold different policy preferences compared to less engaged citizens, although the ideological direction taken by these preferences is still disputed. For instance, most findings indicate that non-voters are more liberal than voters, especially on welfare and redistributive issues (Bennett and Resnick 2010; Griffin and Newman 2005; Verba and Nie 1972). However, Lutz (2007) finds that non-voters tend to be more conservative than voters in Switzerland. Likewise, Adams and Ezrow (2009) use Eurobarometer surveys from 1973 to 2002 to demonstrate that opinion leaders position themselves more to the left than other voters do.

In addition, a growing literature shows that the preferences of politically active citizens exert more influence on political decision-making. Looking at the effect of electoral participation, Griffin and Newman (2005) link US senators' aggregated voting decisions to the mean ideological self-placement of their states' voters and non-voters. Their analyses provide empirical evidence that voters are better represented than non-voters. Likewise, Martin and Claibourn (2013) find that district participation, measured by the average turnout rate, increases legislators' responsiveness to district preferences. Higher turnout rates are also financially rewarded. Studies show that districts where turnout rates are high spend more on welfare, social, and redistributive policies (Fowler 2013; Martin 2003; Mueller and Stratmann 2003). These findings suggest that responsiveness is a function of electoral participation.

Related research investigates the representation gap between ordinary citizens and more sophisticated citizens. For instance, Jacobs and Page (2005) find that US foreign policy is only marginally influenced by ordinary citizens, compared to the influence exerted by experts and the business world. Moreover, Adams and Ezrow (2009) show that opinion leaders exert a disproportionate influence on mainstream parties. With regard to European integration issues, findings indicate that party elites are mainly influenced by party supporters when the proportion of opinion leaders within the party's support base is high (Steenbergen *et al.* 2007). Again, these studies provide evidence that politically engaged citizens have their voices heard more by political leaders.

Democratic responsiveness also varies across policy domains. Scholars suggest that differences in issue salience could explain variations in responsiveness. More precisely, policy-makers might be more responsive to the public when issues are salient because it increases citizens' attention and interest in political affairs. Furthermore, individuals usually display more consistent opinions on issues they consider important since they are more likely to become informed about them. Research results on the effect of salience are, however, controversial. While most research shows that issue salience increases the extent to which citizens' preferences are represented (Giger and Lefkofridi 2014; Hobolt and Klemmensen 2005), other studies provide evidence that high salience is not a sufficient condition to ensure democratic responsiveness (Hayes and Bishin 2012; Soroka and Wlezien 2010). With regard to our research question, issue salience should affect ordinary citizens' propensity to participate in politics. Accordingly, we expect issue salience to decrease the representation gap between opinion leaders and rank-and-file voters.

Based on the literature discussed above, this article tests three hypotheses in order to answer the following research question: *are opinion leaders better represented than rank-and-file-voters?* First, we expect opinion leaders to hold distinct preferences compared to the rest of the electorate. Second, we expect MPs to be more responsive to the former sub-constituency. Third, we expect unequal representation to be lower when issue salience is high. To test these hypotheses, we examine one aspect of policy-making, namely legislators' roll-call behaviour. In particular, we study responsiveness by focusing on legislators' individual voting decisions, since Switzerland combines elements of individual and party accountability. Although citizens are given the possibility to vote for individual candidates and/or party lists in elections to the federal parliament, a majority of voters actually casts party ballots without making any changes to the proposed lists.[1] Party unity is relatively high in Switzerland, yet it is still considerably lower than most parliamentary democracies (Hug 2010). Consequently, legislators face two important principals, party leaders and constituents, who may well make competing demands on them (Carey 2009). Such a legislative context explains why we do not employ a dyadic representation approach, which has mainly been used to study cases such as the US Congress, where the personal relationship between a representative and their constituency is strong. It also explains why we do not examine collective actors, such as political parties or governments, a strategy often used to study responsiveness where party unity is almost perfect. Instead, we study democratic responsiveness through the lens of both collective and ideological representation. More precisely, we examine the extent to which legislators respond to (1) the mean preferences of opinion leaders and rank-and-file voters in the national electorate, and (2) the mean preferences of opinion leaders and rank-and-file voters in the subset of those voters who are ideologically close to them. We discuss these two models more thoroughly in the next section.

Data and methods

In order to answer our research question, we follow a two-step strategy. The first step is descriptive and assesses whether policy preferences vary according to opinion leadership. We use Swiss direct democracy procedures to infer citizens' preferences for discrete policies. In practical terms, we examine whether opinion leaders exhibit significantly different voting patterns compared to other voters. Data on citizens' voting behaviour are drawn from the Vox database, which compiles a series of standardised post-vote surveys providing information on turnout and voting choices for each popular vote since 1977. Each survey is based on a representative sample of approximately 1,000 to 1,500 eligible voters. Popular votes take place up to four times a year and are based on three types of legislative project: first, any constitutional change requires a referendum; second, optional referenda can be launched against any new law if 50,000 signatures are gathered; third, citizens can propose a constitutional change by launching a popular initiative if 100,000 signatures are collected. In total, our analyses are based on 98 popular votes from 1996 to 2008 (see Table 6 in the online Appendix). We restrict our analysis to this time period because the two questions that allow us to identify 'opinion leaders' are not included in the Vox surveys after 2008.

To examine the differences in voting behaviour, we perform a logistic regression on citizens' voting decisions for each of the 98 proposals. The dependent variable is a citizen's voting decision on a policy proposal (0 = *no*, 1 = *yes*). We recoded the dependent variable so that the value of 1 means voting in favour of the more liberal or 'leftist' alternative.[2] Our main independent variable shows whether a voter belongs to the sub-constituency of opinion leaders (0 = *no*, 1 = *yes*). Opinion leaders are operationalised as citizens who *frequently* discuss politics and who *frequently* or *from time to time* attempt to persuade others to change their viewpoints (Adams and Ezrow 2009; Lazarsfeld *et al.* 1968; Steenbergen *et al.* 2007).[3]

In the second step of our analysis, we investigate whether opinion leaders are better represented than the rest of the electorate. Note that due to important missing data, non-voters are excluded from the analysis. We draw on Achen's (1978: 490) concept of 'responsiveness',[4] which refers to the ideological distance between legislators and their constituents (Golder and Stramski 2010), and examine to what extent legislators respond to the opinion of our two sub-constituencies. In particular, we combine legislative roll-call votes[5] and information on popular votes from direct democracy procedures. The roll-call data come from Hug and Martin (2012) and information about citizens' voting choices are from the Vox surveys discussed above. Combining these data enables us to compare the revealed preferences of MPs and citizens for exactly the same legislative projects. We restrict our analyses to the 23 policy proposals that significantly divided our two sub-constituencies of interest.

To assess whether legislators respond disproportionately to opinion leaders, we estimate a two-level hierarchical model. Our dataset is structured on the vote-MP level, so that each observation represents the vote of a particular MP on a certain policy proposal. The outcome variable is a legislator's voting choice on a policy proposal (0 = *no*, 1 = *yes*).[6] We recoded the dependent variable so that the value of 1 means voting in favour of the 'leftist' option (see note 2 for details).

High collinearity between the preferences of opinion leaders and other voters ($r = 0.95$) might render our estimations unreliable. To circumvent this potential problem, we follow Adams and Ezrow (2009) and Griffin and Newman (2005) and compute a variable measuring the difference between the proportion of opinion leaders and the proportion of other voters voting for the more liberal alternative for each policy proposal (*Diff. opinion leaders–other voters*). In order to take into account the extent to which a policy proposal received support from voters, we include the proportion of rank-and-file voters who favoured the more liberal alternative (*Other voters*) in a given vote. This strategy purges our model of collinearity; the correlation between the variables *Diff. opinion leaders–other voters* and *Other voters* is –0.21. As a robustness check, we also performed our analyses using the variables measuring the proportion of opinion leaders (*Opinion leaders*) voting in favour of the more liberal alternative and the proportion of rank-and-file voters supporting this same alternative (*Other voters*) in a vote. The analyses yielded similar results (see Table 4 in Appendix A).

In order to assess the effect of salience, our models include a vote-level variable measuring the importance voters assigned to each policy proposal and its interaction with our two main independent variables.[7] Furthermore, our models control for the overall turnout rate in a popular vote, the issue area of a proposal (economic issues (reference category), social issues, European Union integration issues related to the bilateral relations between Switzerland and the European Union, and other issues).[8] The models also incorporate information on the juridical type of policy proposals that are put through a popular vote (counterproposal to an initiative (reference category), optional referendum, popular initiative, and mandatory referendum). At the MP level, our model includes predictors that have been shown to influence legislative behaviour, including the MP's gender (*female* = 1), seniority (*seniority* = 1), partisan affiliation,[9] district magnitude (a continuous variable), and linguistic region (*predominantly French-speaking or Italian-speaking canton* = 1). Our data cover almost four subsequent legislatures (45th–48th legislative periods). In total, the second part of our analysis is based on the voting behaviour of 463 MPs for 23 votes with an overall number of about 4,000 votes cast.

We first estimate our model using a collective representation framework. This framework is based on the argument that parliament as a collective body should proportionally represent citizens' policy preferences (Weissberg 1978). In practical terms, we assess the degree to which the mean preferences of

opinion leaders and rank-and-file voters in the national electorate are represented by the parliament. However, legislators in proportional representation systems are likely to respond primarily to their partisan supporters. We thus run a second model in which legislators represent only the preferences of voters who are ideologically close to them (ideological representation framework). This model is based on different variables measuring the policy preferences of legislators' partisan support base in a given vote. For example, for a legislator affiliated to a left-wing party, the variable 'Other voters' now measures the proportion of left-wing rank-and-file voters who voted in favour of the more liberal alternative. We used voters' ideological closeness rather than self-reported party identification to measure partisan supporters because the former survey question produced less missing data than the latter. This measure of partisan supporters is thus more reliable with regard to centre and small left- and right-wing extremist parties.

In subsequent analyses, we test the robustness of our results. First, we address potential measurement errors, which can arise from the fact that less sophisticated voters exhibit less stable and consistent opinion patterns. To do so, we run the ideological representation model on a restricted sample of citizens, namely those who can be considered as politically knowledgeable. To identify knowledgeable voters, we draw on questions in the Vox survey that asked voters whether they could either recall the title or describe the content and aim of the proposal they had voted on. Second, both MPs and opinion leaders generally have high levels of education and therefore might have similar policy preferences (Hakhverdian 2015; Pontusson 2015). To rule out descriptive representation as an explanation of the pattern we observe, we introduce a control variable measuring legislators' educational attainment.[10] Third, we address the issue of reverse causality. Since citizens may take cues from legislators, we extend our model with information about the intensity of voting campaigns between 1999 and 2005 (Nai 2013). Our reasoning is the following: if the influence of opinion leaders on MPs does not depend on the intensity of the voting campaign, we can rule out – or at least alleviate – the concern that reverse causality is driving our results. The intensity of referendum campaigns is measured by the overall size of adverts (in cm^2) placed in six major Swiss newspapers[11] during the month before the ballot. In short, 'intense campaigns take up greater amounts of public space, which means that the quantity of information available on a given topic is bigger, if not necessarily richer' (Nai 2013: 54). Finally, we use an instrumental variable approach to rule out reverse causality (the instrumental variable approach is discussed in Appendix B).

Our strategy to estimate legislative responsiveness improves existing research, although potential measurement errors might arise from using survey responses to infer voters' preferences. Indeed, Funk (2012) shows that respondents to the

Vox surveys tend to over-report having voted and having voted in accordance with the majority of the electorate. However, this bias implies that we underestimate unequal representation. Rank-and-file voters are probably more likely to misreport their voting behaviour and adjust it to the outcome of the vote.[12]

More importantly, our research design enables us to overcome widespread identification problems encountered in the study of democratic responsiveness. Because most analyses rely on survey data to measure public opinion and roll-call records to measure legislator preferences, identical information on elites' and citizens' preferences is often lacking. Using different scales to compare the representation of different groups is problematic (Achen 1977; 1978; Hug and Martin 2012; Masket and Noel 2012; Matsusaka 2001). Since we draw on roll-call votes and popular votes that were held on exactly the same proposals with identical wording, we are able to obtain identical information on the preferences of legislators and voters.

Direct democracy procedures also enable us to overcome potential bias arising from the fact that citizens' preferences are usually inferred from very few survey items. Moreover, as Gilens (2012: 44–7) noted, roll-call data usually restrict the set of policies examined to those that belong to what has been called 'the governmental agenda'. Legislators mainly vote on issues that have been taken up by the government and ignore those which have not made it onto its agenda. As a consequence, 'the public agenda', composed of issues that are raised by the public, the media or interest groups, are excluded from analyses. This raises concerns about studies using roll-call data to address democratic responsiveness, since citizens' preferences are usually broader than the issues included in the governmental agenda. Again, the direct democratic context helps us to overcome this limitation. It provides citizens and organised interest groups with the ability to put an issue on the political agenda by launching a popular initiative. Our data thus include a sample of policies both from the government and from the public.

Finally, most studies on congruence focus on the left–right dimension and thus ignore the multidimensionality of political competition. While acknowledging that partisan organisations mediate the representation of citizens' preferences in Western Europe, previous studies have mainly examined mainstream parties, which primarily compete on the left–right scale (Adams *et al.* 2006; Adams and Ezrow 2009; Thomassen 2012). The Swiss case allows us to broaden the research agenda and focus on discrete policies that are relevant to the left–right and the cultural (also called authoritarian-liberal) scale. Hence, our research design enables us to investigate legislative responsiveness more accurately.

Results

Testing the policy preferences hypothesis

Opinion leaders make up 20 per cent of the voters in our sample. Table 1 presents further descriptive statistics about opinion leaders and the rest of the electorate. In line with the literature, the data indicate that opinion leaders are high-resource citizens and politically more active than rank-and-file voters (Adams and Ezrow 2009; Lazarsfeld *et al.* 1968; Steenbergen *et al.* 2007). Furthermore, Table 1 presents the distribution of ideological identification among opinion leaders and the rest of the electorate. It shows that opinion leaders place themselves more at the extremes on the left–right scale. Figure 1 then graphically shows the results of the 98 logistic regressions for the citizens' voting behaviour model. The figure presents the differences in the predicted probabilities that opinion leaders and rank-and-file voters vote in favour of the more liberal alternative. The figure groups popular votes according to four broad political domains, namely economic issues, EU issues, social issues, and proposals concerning other issues. Here, our aim is to assess whether policy preferences vary according to opinion leadership. Figure 1 shows that the preferences of opinion leaders and those of other voters are generally aligned. The difference between the two groups of voters is only significant for 23 out of 98 policy proposals.[13] More precisely, the voting decisions of the two sub-constituencies are not significantly different from one another in almost all proposals included in the category of economic issues and other issues. However, the preferences of opinion leaders are significantly different from the preferences of other voters for almost all proposals dealing with European integration issues and social issues. These two policy areas include proposals dealing with immigration, collective identity, and European integration issues, which belong to the cultural axis of the political space. Studies have shown that this axis has become increasingly important in West European politics over the last two

Table 1. Descriptive statistics.

	Other voters	Opinion leaders
	(%)	(%)
Low political competence	30	12
High political competence	38	58
Active member of political party	3	14
Passive member of political party	4	9
No party membership	93	77
Has not voted in the last 10 referendums	25	4
Has always voted in the last 10 referendums	46	78
Extreme-left	6	11
Left	19	24
Centre	51	34
Right	17	21
Extreme-right	7	10

Note: The difference of means tests indicate that all differences are statistically significant at the 0.001 level.

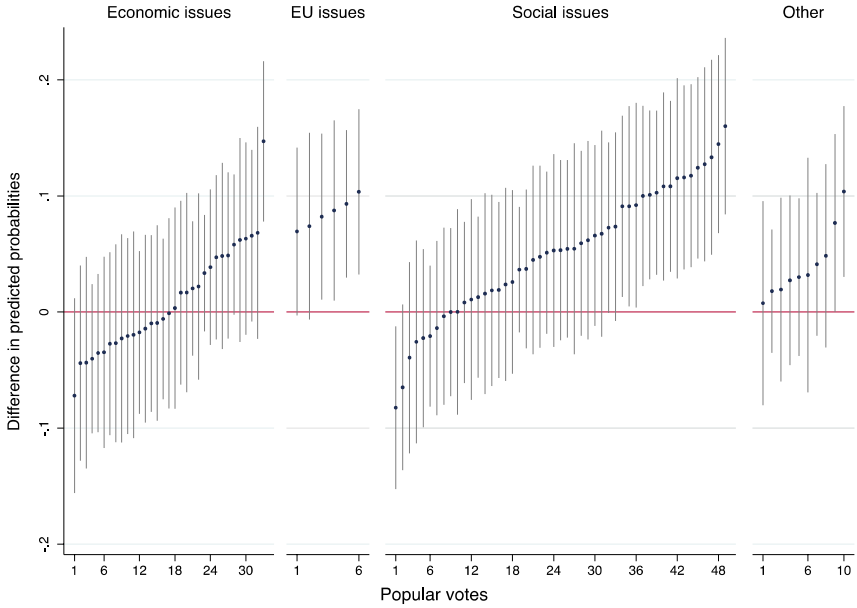

Figure 1. The policy preferences of opinion leaders and other voters.
Note: The figure shows the predicted probabilities of voting in line with the recommendations of left-wing parties for opinion leaders minus other voters, together with the 95% confidence intervals.

decades (Kriesi *et al.* 2006). Moreover, the increased salience of cultural issues has important potential consequences for democracy, such as the rise of right-wing populist parties (Bornschier 2010; Stubager 2010).

Consistent with previous research showing that politically active citizens are more leftist than less active citizens (Adams and Ezrow 2009; Lutz 2007), Figure 1 reveals that opinion leaders are generally ideologically to the left of rank-and-file voters in Switzerland. This is especially the case for popular votes concerning EU integration issues, social issues, and proposals on other issues. With regard to the economic domain, the pattern suggests that opinion leaders often display conservative positions, although the results are not significant for the majority of proposals included in this category.

To summarise, the first step of our analysis shows that the preferences of opinion leaders differ significantly from the preferences of rank-and-file voters in about one-quarter of the policy proposals examined here. Accordingly, the two groups differ moderately from one another in terms of their preferences. When they do differ, opinion leaders are more leftist than the rest of the electorate. This finding is in line with research showing that politically active citizens often have similar preferences than less active ones (Ellis *et al.* 2006). With regard to our research question, we can conclude that there is no basis for unequal representation for the majority of proposals in our sample. However,

opinion leaders might well be better represented when their preferences differ from those other voters display. The following section addresses this question.

Testing the democratic responsiveness hypothesis

We now turn to our main focus, namely whether legislators are more responsive to opinion leaders than to the rest of the electorate (Table 2). In this second step of the analysis, we draw on the 23 policy proposals for which the preferences of opinion leaders and other voters differ significantly. Overall, our results suggest that legislators represent opinion leaders better than rank-and-file voters.

In the first specification of Table 2, we adopt the collective representation approach (Model 1, Table 2). This approach assesses whether parliamentary members are more responsive to the preferences of opinion leaders than to the preferences of other voters in the national electorate. The proportion of other voters favouring the more liberal option has a significant and positive effect on the probability that a legislator will vote for this alternative. In other words, legislators respond to rank-and-file voters' mean policy preferences. However, the coefficient for the difference between opinion leaders' and other voters' preferences is also positive and significant. Accordingly, legislators disproportionately respond to the former sub-constituency. Even after taking into account the preferences of other voters, which capture the tendency of the general public, opinion leaders have a great influence on the voting behaviour of MPs although they are a minority of the electorate (20 per cent of all the voters).[14]

Consider the following cases. When 50 per cent of rank-and-file voters and 50 per cent of opinion leaders approve the more liberal alternative, our model predicts a 69.0 per cent approval rate among MPs from the PRL party using the reference categories for the other variables (logit^{-1} (0.74+0.07×50+0.07×0−3.44)). However, the approval rate among PRL MPs depends to a large extent on the preferences of opinion leaders. For example, when 50 per cent of rank-and-file voters and 70 per cent of opinion leaders approve the more liberal alternative, our model predicts a 90 per cent approval rate among PRL MPs (logit^{-1} (0.74+0.07×50+0.07×20−3.44)). This prediction drops to 35.4 per cent when only 30 per cent of opinion leaders approve the more liberal alternative (logit^{-1} (0.74+0.07×50+0.07×20−3.44)). Accordingly, opinion leaders, as a minority of the electorate, have a great influence on the approval rate among MPs.

Figure 2 illustrates these findings. It shows the predicted probability of 'leftist' voting for legislators of the four main parties in parliament as a function of the difference between opinion leaders' and rank-and-file voters' preferences (all other variables are held constant at their mean values or modal values in the case of binary variables). For legislators of all four parties, the probability of voting for the more liberal alternative increases with the proportion of opinion leaders in favour of this option (relative to the proportion of rank-and-file voters). This pattern, however, is least pronounced for the right-wing Swiss People's Party, whose members do not seem to respond strongly to opinion leaders.

Figure 3 further elaborates this finding. It shows the probability that MPs will vote for the more liberal option as a function of the difference between opinion leaders' and other voters' preferences for two approval levels among other voters. A value of zero on the x-axis indicates that opinion leaders and rank-and-file voters do not differ in their preferences: in both groups 70 per cent approve a proposal for the solid line, and 30 per cent for the dashed line. The figure reveals that legislators' responsiveness to opinion leaders is relative to the extent to which other voters support a policy proposal. From tight votes with approval rates around 50 per cent onwards, opinion leaders make a large difference (Figures 2 and 3). This pattern is less pronounced for parties which place themselves more on the extremes of the left–right scale, such as the PSS and the UDC.

In the second specification (Model 2, Table 2), we run our analysis for the ideological representation framework. The model assesses whether MPs are more responsive to opinion leaders than to rank-and-file voters within their re-election constituency. The analysis yields similar results to the collective representation approach. The preferences of rank-and-file voters are significantly and positively related to MPs' voting behaviour. Yet the coefficient for the variable measuring the difference between opinion leaders' and other voters' preferences is also positive and significant. With respect to our main hypothesis, we thus find that legislators respond disproportionately to opinion leaders. Figure 4 illustrates this finding: legislators of all main parties are more likely to vote in favour of the more liberal option as the proportion of opinion leaders favouring this option increases (relative to the proportion of other voters).

Figure 5 provides more details about this result. It plots the probability that legislators will vote for the more liberal option as a function of how much opinion leaders and rank-and-file voters differ in their preferences for different approval levels of other voters. The pattern shows that opinion leaders exert a disproportional influence on MPs' voting behaviour for the four main parties represented in parliament. This finding holds even when rank-and-file voters predominantly favour the more conservative option. Our results are thus in line with previous research findings showing that opinion leaders are better represented by political elites (Adams and Ezrow 2009; Steenbergen *et al.* 2007).

Scholars have also argued that democratic responsiveness is a function of issue salience (Giger and Lefkofridi 2014; Hobolt and Klemmensen 2005; Soroka and Wlezien 2010). The third specification in Table 2 investigates this assertion by including an interaction between the variable *Diff. opinion leaders–other voters* and the level of salience of a proposal (Model 3). Theory predicts an increase in the level of legislative responsiveness towards rank-and-file voters when popular votes are salient. The coefficient for the difference variable is positive and significant, which indicates that opinion leaders are better represented even on low salience votes. The coefficient for the interaction term, however, is close to zero and fails to reach any conventional level of significance.

Table 2. Legislative voting behaviour model.

	1		2		3		4		5	
	Collective representation		Ideological representation		The effect of salience		Knowledgeable voters		Educational attainment	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
Collective representation										
Other voters	0.07***	0.08								
Diff. opinion leaders–other voters	0.07*	0.03								
Ideological representation										
Other voters			0.11***	0.01	0.11***	0.01	0.12***	0.01	0.11***	0.01
Diff. opinion leaders–other voters			0.09***	0.01	0.09***	0.01	0.09***	0.01	0.10***	0.01
Control variables										
EU issues	1.66*	0.67	1.87	1.03	1.86	1.02	1.80	1.27	1.88	1.01
Social issues	−0.01	0.60	−0.06	0.95	−0.07	0.94	−0.20	1.17	−0.09	0.93
Other issues	0.48	1.10	−2.93	1.68	−2.79	1.77	−3.73	2.05	−2.90	1.67
Turnout rate	−0.07*	0.03	−0.03	0.05	−0.03	0.05	−0.03	0.06	−0.02	0.05
Optional referendum	−2.01***	0.42	−3.14***	0.67	−3.17***	0.67	−3.26***	0.82	−3.12***	0.66
Popular initiative	−1.95***	0.41	−2.68***	0.63	−2.67***	0.62	−2.63***	0.78	−2.67	0.62
Salience					0.13	0.39				
Other voters*Salience					0.00	0.01				
Diff. opinion leaders–other voters*Salience					−0.00	0.01				
Female	0.28*	0.13	0.44**	0.15	0.44**	0.15	0.44**	0.15	0.39*	0.15
Seniority	0.08	0.13	0.00	0.16	0.00	0.16	−0.01	0.16	0.04	0.16
PDC	−3.35***	0.19	−0.31	0.27	−0.31	0.27	−1.12	0.37	−0.30	0.21
PRL	−3.44***	0.18	0.72*	0.30	0.72*	0.30	0.95***	0.30	0.71*	0.31
UDC	−5.70***	0.21	−2.07***	0.30	−2.07***	0.30	−1.82***	0.30	−2.08***	0.31
Other left-wing parties	−0.75**	0.25	−0.77**	0.29	−0.77**	0.29	−0.79**	0.29	−0.83**	0.30
Other centre parties	−2.16	0.31	1.43***	0.40	1.43***	0.40	1.65***	0.40	1.37***	0.42
Other right-wing parties	−5.89***	0.36	−2.65***	0.42	−2.64=***	0.43	−2.45***	0.43	−2.50***	0.44
District magnitude	0.03	0.05	0.04	0.06	0.04	0.06	0.04	0.06	0.02	0.06

(*Continued*)

Table 2. (*Continued*).

	1		2		3		4		5	
	Collective representation		Ideological representation		The effect of salience		Knowledgeable voters		Educational attainment	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
Latin canton	0.33**	0.12	0.41***	0.14	0.41**	0.14	0.42**	0.14	0.35*	0.15
Middle-level education									0.29	0.15
High-level education									0.37*	0.19
Constant	0.74	1.00	−2.46*	1.24	−2.46*	1.24	−2.94*	1.49	−2.70*	1.24
sd(constant)	0.48	0.10	0.80	0.18	0.79	0.19	1.01	0.21	0.78	0.19
Log likelihood	1369.35		−1074.54		−1074.50		−1069.04		−1009.05	
n	4005		4005		4005		4005		3768	

Note: Number of votes 23; Sig. $^{*}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$.

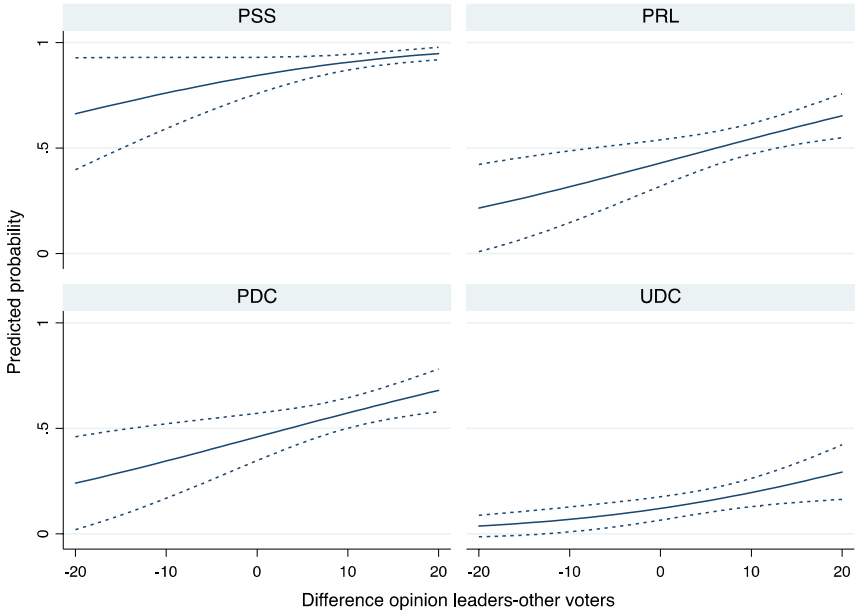

Figure 2. Legislative responsiveness to opinion leaders (Model 1).
Note: The figure shows the predicted probability for an MP to vote in favour of the more liberal option on a given proposal, together with the 95% confidence intervals. Predicted probabilities are calculated for social issues. All other variables are set to their mean or to their modal value. The mean for other voters is 51%.

Contrary to our expectation, our findings suggest that salience does not increase legislative responsiveness to the preferences of rank-and-file voters, thereby reinforcing the conclusion that legislators disproportionately respond to opinion leaders (see also Figure 6 in Appendix A).

Sensitivity analyses

To further increase confidence in our findings, we examine the robustness of the ideological representation model with regard to two important issues. We first deal with the problem that less educated and politically less active citizens often lack meaningful preferences (Hayes and Bishin 2012; Lutz 2007; Zaller 1992). Because rank-and-file voters generally have lower levels of education and political interest than opinion leaders, their preferences might be less coherent and stable. To address this problem, we run our model on the subsample of knowledgeable voters, which includes respondents who could either recall the title of a proposal or describe its content and aim. If our findings are not due to higher measurement error in rank-and-file voters' responses, legislators should turn out to be more responsive to opinion leaders even if we restrict our sample

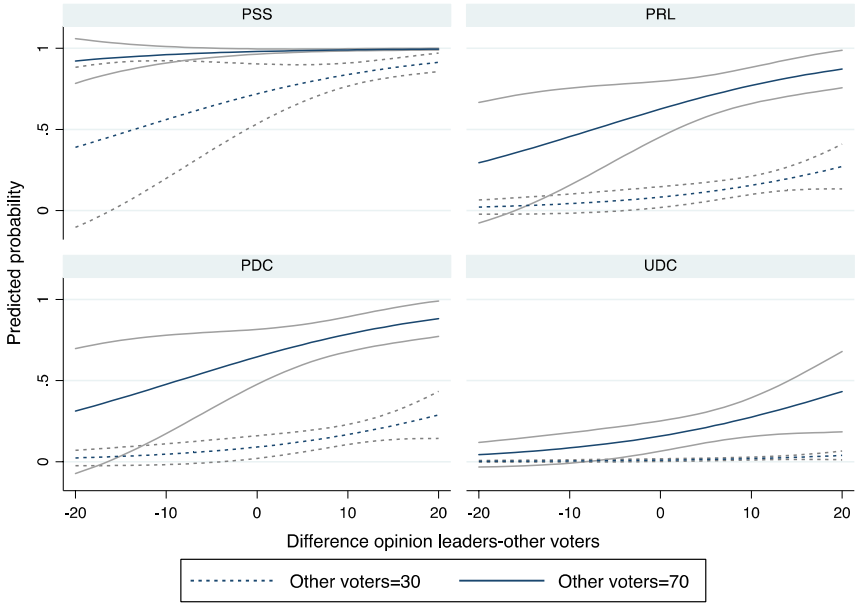

Figure 3. Legislative responsiveness to opinion leaders for different levels of approval among other voters (Model 1).
Note: The figure shows the predicted probability for an MP to vote in favour of the more liberal option on a given proposal, together with the 95% confidence intervals. Predicted probabilities are calculated for social issues. All other variables are set to their mean or to their modal value.

to knowledgeable voters. Indeed, restricting the sample to knowledgeable voters does not change our conclusion that opinion leaders exert more influence on legislators' voting behaviour (Table 2, Model 4; see also Figure 7 in Appendix A). This finding indicates that unequal representation is not an artefact of greater measurement error in rank-and-file voters' preferences.

Second, it is possible that legislators vote more often in line with opinion leaders' preferences not because they are more responsive to them, but because they frequently share similar interests. We therefore examine whether our findings are a consequence of unequal 'descriptive representation' (Pitkin 1967), which relies on the assumption that legislators and constituents who share similar social characteristics have similar preferences. We are especially concerned about the effect of educational attainment considering that the educational gap in political preferences has become increasingly important to understand political decision-making (see e.g. Bovens and Wille 2009). More precisely, recent studies show that descriptive misrepresentation by education is central to understanding the lack of congruence between citizens and elites on the socio-cultural axis, which includes issues such as immigration, collective identity, and European

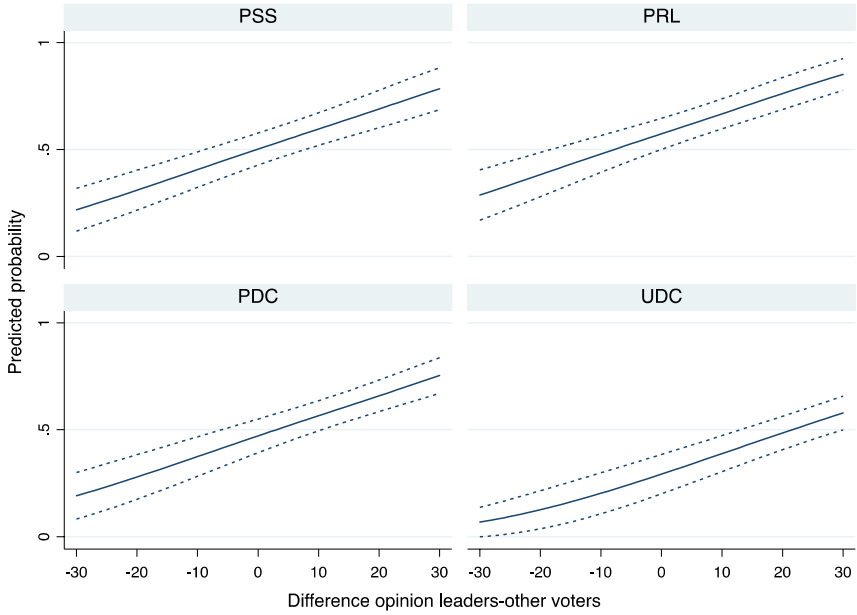

Figure 4. Legislative responsiveness to opinion leaders (Model 2).
Note: The figure shows the predicted probability for an MP to vote in favour of the more liberal option on a given proposal, together with the 95% confidence intervals. Predicted probabilities are calculated for social issues. All other variables are set to their mean or to their modal value. The mean for other voters is 52%.

integration (Hakhverdian 2015). The salience of these issues has increased over the last two decades (Bornschier 2010; Kriesi *et al*. 2006). As a consequence, the role of education for political preferences has become more prominent, with some talk about the emergence of a new education-based cleavage in West European countries (Hakhverdian *et al*. 2013; Stubager 2010). The highly educated are over-represented among both legislators and opinion leaders. Accordingly, it might be the case that their similar educational background results in similar policy preferences. To control for the effect of descriptive representation, we combine our data with information on legislators' educational attainment (Mach and David 2010). Including variables controlling for descriptive representation does not change our results significantly (Table 2, Model 5; see also Figure 8 in Appendix A). This finding indicates that our results are not due to the greater descriptive representation of opinion leaders.

Addressing reverse causality

The models presented above assume that voters influence legislators' voting behaviour. But what if political elites shape the preferences of citizens? Our models could capture the influence that legislators have on citizens' voting

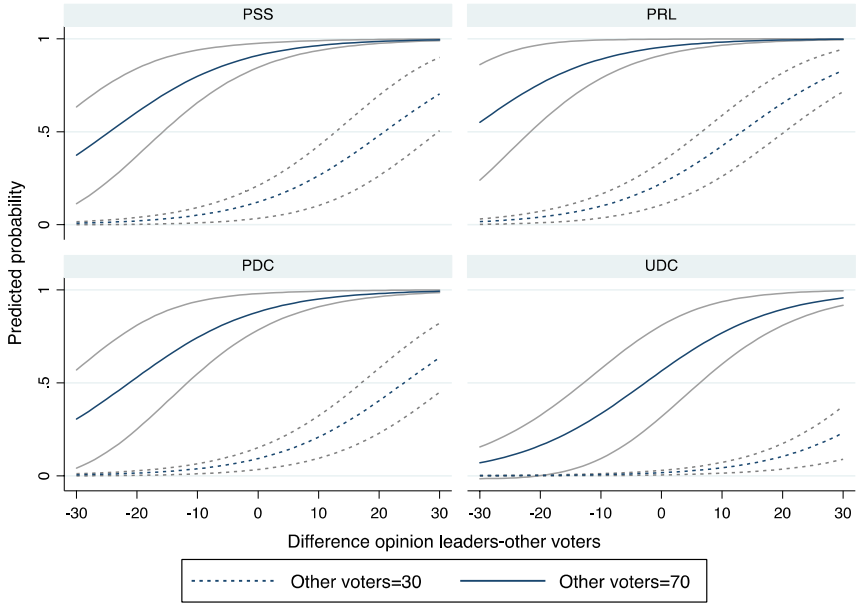

Figure 5. Legislative responsiveness to opinion leaders according to different levels of approval among other voters (Model 2).
Note: The figure shows the predicted probability for an MP to vote in favour of the more liberal option on a given proposal, together with the 95% confidence intervals. Predicted probabilities are calculated for social issues. All other variables are set to their mean or to their modal value. The mean for other voters is 52%.

choices and thus challenge our findings. The fact that the parliamentary votes take place before the popular votes gives credit to this suspicion. Moreover, there is a substantial time lag between the moment a proposal is discussed and voted on in parliament and the moment it undergoes the referendum campaign and is voted on by the people. As a number of studies have shown (see e.g. Kriesi 2005), legislative debate and votes may serve as cues in the formation of public opinion and our models could, at least to some extent, capture the influence of legislators' voting behaviour on citizens' voting choices (i.e. cue taking). In this section, we conduct two sensitivity analyses that address the challenge of reverse causality. First, we use information about the intensity of voting campaigns to examine whether our results are driven by the influence of political elites on the opinion formation of the public (Nai 2013). Second, we rely on an instrumental variable approach to focus on variation in citizens' voting behaviour that is unaffected by MPs' votes.

We first use data on the intensity of political campaigns between 1999 and 2005 to address the issue of reverse causality (Nai 2013). This sensitivity analysis is based on the idea that the potential influence of MPs on voters depends on campaign intensity whereas the influence of citizens on MPs is relatively

independent of campaign intensity. In particular, when campaign intensity is low, opinion leaders and rank-and-file voters should be less influenced by MPs' voting behaviour. The level of information on proposals is low and MPs' voting choices and parties' recommendations are less well known to voters. In other words, voters are not in a position to take cues from political elites when campaign intensity is low. On the other hand, intense campaigns increase voters' exposure to political messages and information. In this setting, voters are more likely to take cues from elites. Accordingly, we would expect that the relationship between the voting behaviour of opinion leaders and legislators is more pronounced when campaigning is intense. If this is not the case, we can rule out – or at least alleviate – the concern that reverse causality is driving our results.

To implement this sensitivity analysis, we include a measure of campaign intensity together with interaction terms between campaign intensity and citizen voting behaviour. The intensity of referendum campaigns is measured by the overall size of adverts (in cm^2) placed in six major Swiss newspapers during the month before the ballot.[15] In short, intense campaigns cover greater amounts of public space, which means that more information is available on a given topic. Table 3 shows that the coefficient for the interaction term *Campaign intensity* × *Diff. opinion leaders–other voters* is close to zero. Consequently, the level of campaign intensity does not mediate the effect of opinion leaders' differential preferences on the responsiveness of legislators. Opinion leaders are thus better represented independent of a voting campaign's intensity. This finding suggests that we indeed measure the effect of democratic responsiveness rather than voters' cue-taking.

Second, we adopt an instrumental variable approach to focus on variation in citizens' voting behaviour that is unaffected by MPs' votes. In particular, we use a number of socio-demographic characteristics of the two voters' groups (opinion leaders and other voters) as instrumental variables. The variables are mean age, proportion of females, proportion of citizens regularly attending religious services, proportion of individuals living in urban areas, and proportion of citizens with higher levels of educational attainment in each group.[16] Several previous studies have used a similar approach (Carrubba 2001; Gabel 1998; Steenbergen *et al.* 2007: 24). Our instruments enable us to rule out reverse causality. They essentially replace citizen voting behaviour with a proxy variable that is unaffected by reverse causality because MPs' voting behaviour does not alter the demographic characteristics of citizens. In other words, the instrumental variable regression restricts the variation in citizen preferences to a part that is unaffected by MP's voting behaviour. Appendix B includes a more detailed discussion of our instrumental variable approach.

Our instrumental variable models are specified as linear probability models (Wooldridge 2013) and fitted using two-stage least squares (2SLS). Instrumental variable probit models only work under restrictive additional conditions and

Table 3. Robustness check.

	Campaign intensity		FE model		IV model	
	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
Ideological representation						
Other voters	0.17***	0.02	0.34***	0.01	0.31***	0.02
Diff. opinion leaders–other voters	0.14***	0.02	0.43***	0.02	0.49***	0.06
Other vote-level predictors						
EU issues			0.25***	0.03	0.22***	0.04
Social issues	−1.78	2.85	0.18***	0.03	0.16***	0.02
Other issues	−9.51	6.09				
Turnout rate	0.36	1.25	0.00**	0.00	0.00	0.00
Optional referendum	−4.67*	2.37	−0.15***	0.04	−0.13***	0.04
Popular initiative	−2.83	2.11	0.04	0.03	−0.02	0.05
Legislator-level predictors						
Female	0.37	0.19	0.03	0.02	0.03	0.02
Seniority	−0.20	0.23	0.00	0.01	0.00	0.01
PDC	−0.44	0.36	0.01	0.02	−0.01	0.02
PRL	1.11*	0.44	0.13***	0.02	0.11***	0.03
UDC	−1.53***	0.43	−0.17***	0.03	−0.19***	0.03
Other left-wing parties	−1.73***	0.37	−0.03	0.02	−0.03	0.02
Other centre parties	2.55***	0.70	0.19**	0.07	0.17*	0.07
Other right-wing parties	−3.20***	0.57	−0.22***	0.04	−0.24***	0.04
District magnitude	0.04	0.07	0.00	0.01	0.00	0.01
Latin canton	0.30	0.18	0.04**	0.01	0.04**	0.01
Campaign intensity						
Campaign intensity	2.80***	0.75				
Campaign intensity*Other voters	−0.06	0.01				
Campaign intensity*Diff. opinion leaders–other voters	−0.00	0.01				
Project fixed-effect			Yes	Yes	Yes	Yes
Constant	−2.97	3.97	0.45***	0.03	0.52***	0.04
sd(constant)	2.25	0.57				
Log likelihood	−690.12					
R-squared			0.62		0.62	
n	2759		4005		4005	

Note: Number of votes 23; Sig. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$.

are plagued by convergence problems for the application at hand. The size of the estimated coefficients from the 2SLS linear probability framework is not directly comparable to the results from the logit models reported above. Nonetheless, the linear probability framework does not prevent us from using the instrumental variable approach as an important robustness check. We also report the effect estimates for linear probability models that resemble the specifications above to compare the instrumental variable models with corresponding estimates.

Table 3 presents the results of the two-stage least squares models with vote fixed effect terms and robust clustered standard errors by MPs. First, column two shows the results from a standard linear probability model that resembles

the specification above with additional fixed effect terms for votes. The specification is equivalent to the instrumental variable model but treats the key independent variables as exogenous. It allows us to compare the results from the instrumental variable regression with a corresponding least squares specification. Column three shows the results for the instrumental variable regression. The findings confirm the results of our main models. The preferences of other voters are positively and significantly related to MPs' voting behaviour. However, the coefficient for the variable *Diff. opinion leaders–other voters* is also positive and significant, which indicates that legislators are more responsive to opinion leaders than to rank-and-file voters. The size of the estimated effects is similar to those reported in column two. To sum up, the instrumental variable approach confirms the robustness of our main results by using different model assumption that are potentially unaffected by reverse causation.

Conclusion

Recent research investigates the extent to which legislators respond to the preferences of their constituents in established democracies (see e.g. Wlezien and Soroka 2007). These studies uncover the limits of equality in representation (Bartels 2008; Gilens 2012; Lefkofridi *et al.* 2012; Wuest and Lloren 2014). Building on this growing literature, this article has examined the link between opinion leadership and legislators' responsiveness. More precisely, we have focused on the representation gap between opinion leaders defined as citizens who regularly discuss politics and who attempt to persuade others to change their viewpoints and the rest of the electorate. We have argued that opinion leaders are better represented than rank-and-file voters since the former group diffuses political messages across society and is therefore central to the representation process.

To examine this argument, we have taken advantage of the Swiss institution of direct democracy. In particular, we have compared the revealed policy preferences of MPs and voters for exactly the same policy proposals. This approach allows us to overcome widespread identification problems due to the fact that legislator and constituent preferences are often not measured on the same scale (Achen 1977; 1978; Masket and Noel 2012; Matsusaka 2001).

Our findings reveal a moderate difference in preferences between opinion leaders and rank-and-file voters. In particular, the preferences differ for about one-quarter of the 98 policy proposals. This difference mostly concerns social and European integration issues. Focusing on the 23 proposals with a pronounced difference between opinion leaders and rank-and-file voters, we show that legislators are more responsive to the preferences of the former. Accordingly, opinion leaders are better represented by policy-makers on some policy issues. This finding is robust to a number of different sensitivity analyses.

Finally, our analyses suggest that issue salience does not increase legislative responsiveness to the preferences of other voters.

Our findings have important implications for understanding the representation of different sub-constituencies. In particular, our results suggest that political engagement and information are not the central mechanisms by which citizens influence policy-makers. With regard to unequal participation, Gallego (2007) has shown that age, education, and social class are the most important factors predicting low participation across various political activities, namely voting, working with parties and action groups, attending demonstrations, and boycotting products. Although studies have increasingly shown that low-resource groups, such as young or poor citizens, lack influence on political decision-making (Gilens 2012; Lefkofridi *et al.* 2012), there has been very little empirical investigation on how political participation can have a mediating effect on democratic responsiveness for these low-resource groups. In this regard, our research shows the limited impact of political participation on substantive representation. Our results are in line with a growing literature showing that increased political activity of low-resource groups does not necessarily lead to better representation for these groups (see e.g. Bartels 1998; Ellis 2012). Opinion leadership is, of course, an imperfect proxy for political activity, and future research should investigate more systematically the participation–representation nexus.

The cultural axis (or the libertarian–authoritarian dimension) of political space has become increasingly important over the last two decades for understanding West European politics (Kriesi *et al.* 2006; Stubager 2010). For instance, the increased salience of cultural issues has led to the rise of right-wing populist parties in many countries (Bornschier 2010). It is worth pointing out that the two policy domains where opinion leadership seems to matter most concern European integration and social issues, including those that deal with immigration questions.[17] While populist parties are often seen as polarising actors, several scholars have pointed out that they could also act as 'egalitarian agents' representing low-resource citizens in a world of growing socio-economic inequality (Bovens and Wille 2009; Hakhverdian *et al.* 2013).

Notes

1. Lutz (2011) noted that 46 per cent of voters cast a party ballot in the 2007 federal elections. In fact, this proportion is even higher, as parties tend to present multiple lists, such as youth, senior, or women lists, in order to win more votes.
2. We used the voting recommendations of the Social Democratic Party (PSS) or the Green Party (PES) to determine whether citizens' voting choices follow the liberal alternative. When both of these parties did not issue any voting recommendation, we relied on the voting recommendations of the right-wing Swiss People's Party (UDC) and coded liberal or 'leftist' voting contrary to these

recommendations. We excluded proposals from the analyses when the two leftist parties (PSS and PES), and the UDC issued common recommendations.

3. We used two questions available in the Vox surveys to create the opinion leader variable. More precisely, respondents were asked: 'How often do you discuss political issues with friends or acquaintances?' and 'When you have a strong conviction in a political matter, do you ever try to convince your friends, relatives or acquaintances to share your views?' For each question, respondents were given four response categories, namely *Frequently*, *From time to time*, *Never* and *I don't know*.
4. According to Achen (1978: 490), responsiveness is based on the idea that 'what the people decide must influence the outcome' and measures the relationship between the opinion of a legislator and the mean opinion of his constituency.
5. More precisely, we use final votes of the Swiss National Council, which are all roll-call votes.
6. Abstention and absence are treated as missing.
7. Our measure of salience is based on a question in the Vox survey asking respondents whether they consider a policy proposal to be important for themselves on a scale ranging from 0 to 10 (personal salience). Based on this question, we computed the mean salience for each proposal. Voters were also asked whether they consider a proposal to be important for their country. The analyses yield results similar to those presented below when using this latter proxy for salience.
8. The category 'economic issues' comprises proposals concerning the intervention of the state in the economy. Social issues include proposals which belong to the cultural dimension of political competition, such as abortion or immigration issues. EU issues include law projects that relate to the bilateral relations between Switzerland and the EU. The appendix contains a table listing all the popular votes used in the analysis according to their issue domain.
9. We include variables for the following parties: Christian Democrats (PDC), Liberals (PRL), Conservatives (UDC), other left-wing parties, other centre parties, and other right-wing parties. Affiliation with the Social Democrats (PSS) is the reference category.
10. Based on Mach and David (2010), we differentiate between three categories of educational attainment, namely low, middle, and high education levels. MPs who have a high school degree or who undertook apprenticeships belong to the lowest category. Those in possession of a college or university diploma are in the 'middle education' category. Finally, those who earned a PhD belong to the 'high education' category.
11. In total, 7,200 adverts were collected from the following journals: *Tribune de Genève*, *Le Temps*, *Neue Zürcher Zeitung*, *Tages-Anzeiger*, *Regione*, and *Giornale del Popolo*.
12. This is even more true since voters usually vote in accordance with the voting recommendations issued by the Parliament.
13. The policy preferences of opinion leaders and other voters differ for the following 23 popular votes: federal law concerning engine size-related duty on heavy goods traffic; federal act on the reform of the judiciary; popular initiative 'for a fair representation of women in the federal authorities'; popular initiative 'to reduce motorised road traffic by half in order to maintain and improve the quality of life'; federal act on the approval of the sectoral agreements between Switzerland on the one hand and the European Community and its member states or Euratom on the other; constitutional article on a tax to promote renewable energy; popular initiative 'yes to Europe'; federal law on the army and military administration (armament); popular initiative 'for a guaranteed old age and survivors insurance – taxing energy instead of work';

popular initiative 'solidarity creates security: for a voluntary civilian peace service'; change to the Swiss criminal code (abortion); popular initiative 'for mother and child – for the protection of the unborn child and help to the mother in need'; popular initiative 'for one car-free Sunday per season – an attempt limited to four years'; popular initiative 'for the continuation of the freeze on the building of nuclear power plants and the limitation of nuclear risk'; federal act on the regular naturalisation and the simplified naturalisation of young, second-generation immigrants; federal act on the acquisition of citizenship rights by third-generation immigrants; federal act on the approval and implementation of the bilateral agreements between Switzerland and the EU on the Schengen and Dublin accords; law on asylum; federal act on urgent measures in relation to asylum seekers and foreigners; federal law on cooperation with the countries of Eastern Europe; popular initiative 'health must remain affordable'; popular initiative 'for a reasonable cannabis policy and an effective youth protection'; change to the federal act on narcotics.

14. As a robustness check, we ran our model using the variables measuring the proportion of opinion leaders and rank-and-file voters favouring the more liberal alternative for each policy proposal. The analyses yield similar results (Table 5 Appendix B).
15. See note 11.
16. See appendix for more details on the instruments.
17. See note 13 for the list of proposals that divided the two groups of voters.

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Appendix A

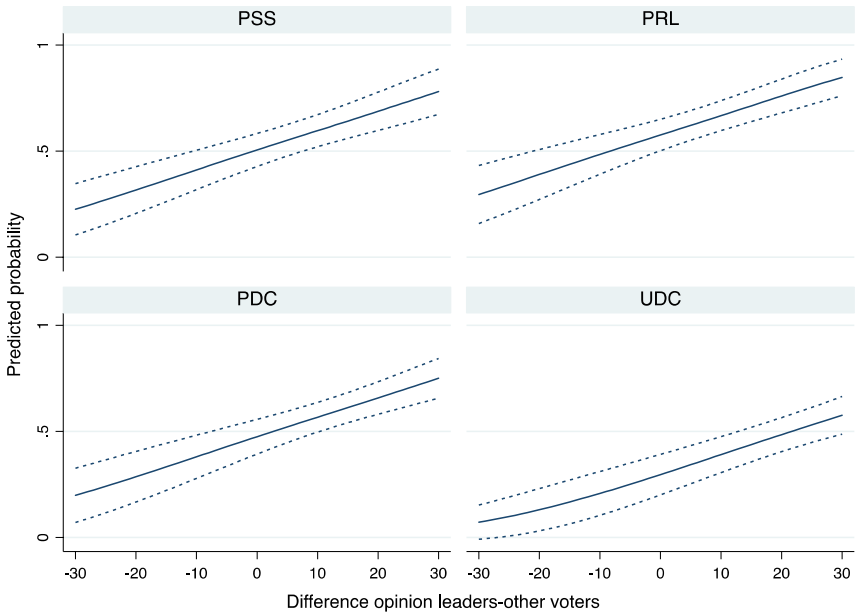

Figure 6. Legislative responsiveness to opinion leaders (Model 3).
Note: The figure shows the predicted probability for an MP to vote in favour of the more liberal option on a given proposal, together with the 95% confidence intervals.
Predicted probabilities are calculated for social issues. All other variables are set to their mean or to their modal value. The mean for other voters is 52%.

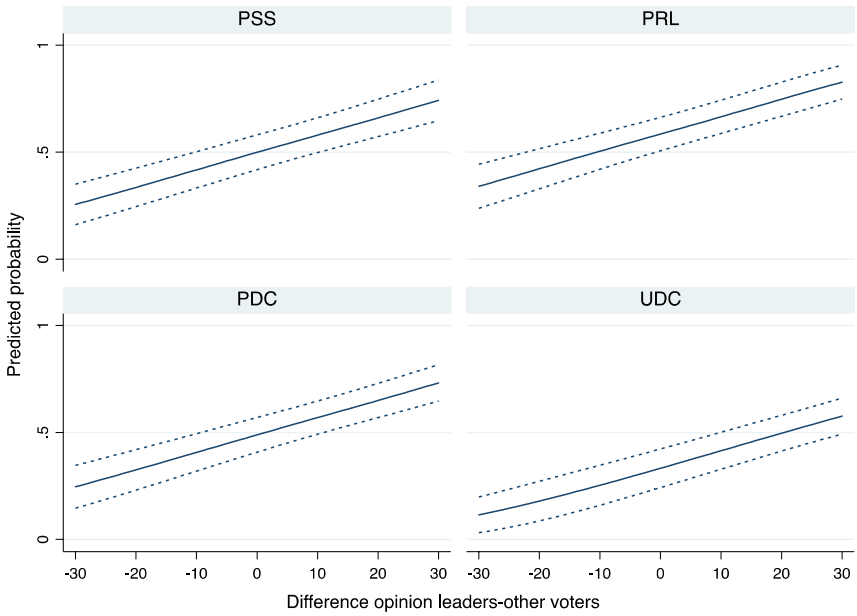

Figure 7. Legislative responsiveness to opinion leaders (Model 4).
Note: The figure shows the predicted probability for an MP to vote in favour of the more liberal option on a given proposal, together with the 95% confidence intervals. Predicted probabilities are calculated for social issues. All other variables are set to their mean or to their modal value. The mean for other voters is 52%.

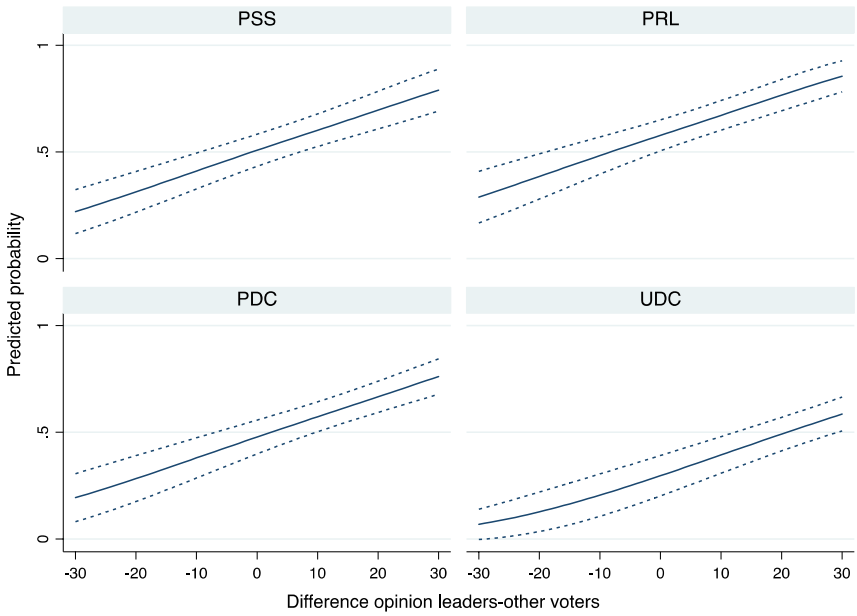

Figure 8. Legislative responsiveness to opinion leaders (Model 5).
Note: The figure shows the predicted probability for an MP to vote in favour of the more liberal option on a given proposal, together with the 95% confidence intervals. Predicted probabilities are calculated for social issues. All other variables are set to their mean or to their modal value. The mean for other voters is 52%.

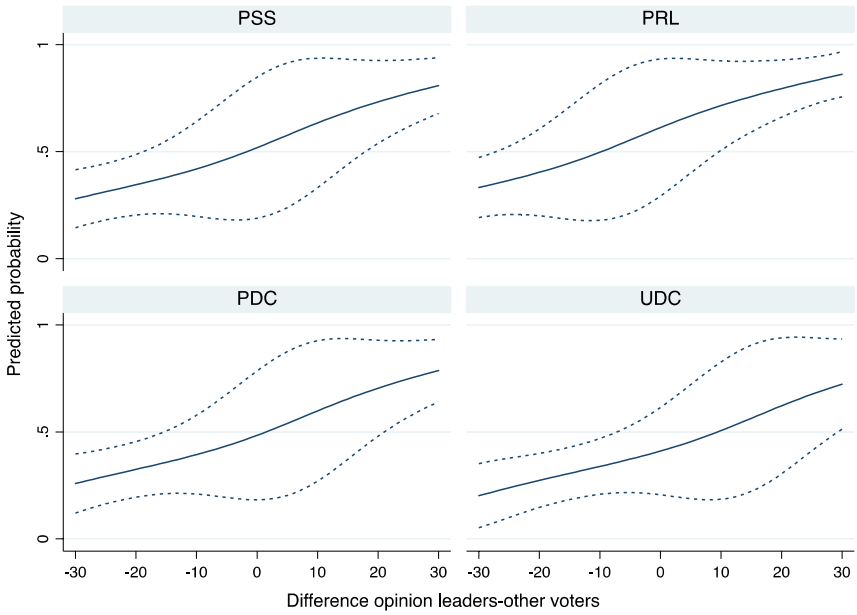

Figure 9. Legislative responsiveness to opinion leaders (Model 6).
Note: The figure shows the predicted probability for an MP to vote in favour of the more liberal option on a given proposal, together with the 95% confidence intervals. Predicted probabilities are calculated for social issues. All other variables are set to their mean or to their modal value. The mean for other voters is 52%.

Table 4. Legislative voting behaviour model.

	Collective representation		Ideological representation	
	Model 1 bis		*Model 2 bis*	
	Coeff.	s.e.	Coeff.	s.e.
Collective representation				
Opinion leaders	0.07*	0.03		
Other voters	0.00	0.03		
Ideological representation				
Opinion leaders			0.09***	0.01
Other voters			0.01	0.02
Control variables				
EU issues	1.66*	0.67	1.87	1.03
Social issues	−0.01	0.60	−0.06	0.95
Other issues	0.48	1.10	−2.93	1.68
Turnout rate	−0.07*	0.03	−0.03	0.05
Optional referendum	−2.01***	0.42	−3.14***	0.67
Popular initiative	−1.95***	0.41	−2.68***	0.63
Salience	−0.02	0.21	0.18	0.33
Female	0.28*	0.13	0.44**	0.15
Seniority	0.08	0.13	0.00	0.16
PDC	−3.35***	0.19	−0.31	0.27
PRL	−3.44***	0.18	0.72*	0.30
UDC	−5.70***	0.21	−2.07***	0.30
Other left-wing parties	−0.75**	0.25	−0.77**	0.29
Other centre parties	−2.16	0.31	1.43***	0.40
Other right-wing parties	−5.89***	0.36	−2.65***	0.42
District magnitude	0.03	0.05	0.04	0.06
Latin canton	0.33**	0.12	0.41***	0.14
Constant	0.74	1.00	−2.46*	1.24
sd(constant)	0.48	0.10	0.80	0.18
Log likelihood	1369.35		−1074.54	
n	4005		4005	
J	23		23	

Note: Sig.
***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

Appendix B. Addressing reverse causality: the instrumental variable approach

We adopt an instrumental variable approach to focus on variation in citizens' voting behaviour that is unaffected by MPs votes. We use a number of socio-demographic characteristics of the two voters' groups (opinion leaders and other voters) as instrumental variables. These are: mean age, proportion of females, proportion of citizens regularly attending religious services, proportion of individuals living in urban areas, and proportion of citizens with higher levels of educational attainment in each group.

There are two major challenges when using instrumental variables. The first concerns the strength of the relationship between the instrumental variables and the main predictors of interest, which is used to identify weak instruments. A wide array of research has shown that these different socio-economic factors predict left-wing voting behaviour and policy preferences (Lazarsfeld, Berelson and Gaudet 1968; Zaller 1992). The first stage regression results shown in Table 5 generally confirm this finding and indicate that the instruments are strongly related to citizens' voting behavior. The partial F-test

ranges from 83 to 1013, which is above the commonly used threshold of 10 (Sovey and Green 2011: 190). Note that our instrumental variable regressions also include vote fixed effect terms as exogenous predictors that are part of both the first and second stage regression. These fixed effect terms ensure that the estimation is based on variation between parties within votes and thereby increase the strength of the instruments.

The second challenge relates to the plausibility of the exclusion restriction and the validity of the instruments. This assumption states that the instrument is only related to the outcome through the endogenous independent variables and not through any other pathway. Previous studies based on the same instruments have argued that voters' characteristics are independent from MPs voting choices as well as from the error term (see, e.g., Carrubba 2001). In other words, it is unlikely that these socio-demographic features of the electorate influence legislative decision making other than through voters' preferences. However, socio-demographic characteristics are by no means perfect instruments (Sovey and Green 2011). For instance, MP's might be more likely to respond to certain sub-groups of the population such as high-income voters. Indeed, previous research has shown that legislators are less likely to respond to low-resource groups both in the US (see e.g. Bartels 1998) and in Switzerland (Lloren, Rosset and Wuest 2015; Rosset 2013; Wuest and Lloren 2014*b*). These differences in responsiveness potentially challenge the validity of our instruments because they outline a process by which socio-demographic features of the population (our instruments) are related to the outcome variable. To address this concern, we use a number of different demographic variables, which allows us to evaluate the sensitivity of the results to these different characteristics. Income, for example, might be particularly problematic (and for this reason is omitted) but the argument might be more plausible for other characteristics. Despite these potential problems, our instrumental variables enable us to rule out reverse causality. The instruments essentially replace citizen voting behavior with a proxy variable that is unaffected by reverse causality because MPs' voting behaviour does not alter the demographic characteristics of citizens. In other words, the instrumental variable regression restricts the variation in citizen preferences to a part that is unaffected by MP's voting behavior.

Table 5. The instrumental variables test.

	Other voters		Diff. opinion leaders–other voters	
Dependent variable:	Coeff.	s.e.	Coeff.	s.e.
Female	−0.01	0.01	0.00	0.01
Seniority	0.01	0.01	0.01	0.01
PDC	−1.11***	0.04	−0.12***	0.02
PRL	−1.30***	0.04	−0.31***	0.02
UDC	−1.30***	0.04	−0.32***	0.02
Other left-wing parties	−0.00	0.01	−0.01	0.01
Other centre parties	−1.16***	0.04	−0.13***	0.02
Other right-wing parties	−1.29***	0.04	−0.31***	0.02
District magnitude	0.00	0.00	0.00	0.00
Latin canton	0.01	0.01	−0.00	0.01
EU issues	1.34***	0.03	−0.21***	0.02
Social issues	−0.77***	0.03	0.05	0.01
Turnout rate	−0.03***	0.00	0.02***	0.00
Optional referendum	0.51***	0.03	0.13***	0.02
Popular initiative	−1.64***	0.03	0.20***	0.02
Other voters % higher education	−0.19***	0.04	−0.47***	0.02
Diff. opinion leaders – voters % higher education	−0.31***	0.05	−039***	0.01
Other voters % female	−0.66***	0.04	0.25***	0.02
Diff. opinion leaders – voters % female	−0.55***	0.06	0.12***	0.01
Other voters mean age	−0.13***	0.02	0.07***	0.01
Diff. opinion leaders – voters mean age	0.15***	0.02	0.07***	0.01
Other voters % religious	−0.12***	0.01	0.14***	0.01
Diff. opinion leaders – voters % religious	−0.07***	0.01	0.06***	0.00
Other voters % urban	0.99***	0.07	0.19***	0.02
Diff. opinion leaders – voters % urban	0.84***	0.08	0.10***	0.02
Project fixed-effect	Yes		Yes	
Constant	−1.77***	0.04	0.25***	0.02
R-squared	0.92		0.68	
F test	83.89		1013.79	

Note: Number of votes 23; Sig.
*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.