

ARTICLE

# The Dynamics of Public Opinion in Direct Democracy Campaigns

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## Abstract

Do initiative and referendum campaigns enable voters to make coherent decisions? Do the dynamics of opinion formation differ across ballot measures? Despite extensive research on direct democratic processes, these questions remain underexplored. Using rolling cross-section data on two citizen-sponsored initiatives in California and two referendums in Switzerland, we examine the dynamics of voters' knowledge about party cues and arguments for and against ballot measures in the run-up to direct democratic votes. Moreover, we assess the extent to which these dynamics help voters to cast votes that are in line with their party cue and consistent with their position on arguments. The results present a nuanced picture: while campaigns increase voters' knowledge and help them to make more coherent choices, there is significant variation across ballots in knowledge acquisition and resulting degree of in-line and consistent voting.

**Keywords:** Referendum/initiative; opinion formation; dual process; RCS

## Introduction

A well-functioning democracy requires that citizens are able to make an informed decision when they vote. Voting for a party, and even more so for a ballot measure in a direct democratic vote, places high demands on voters. While direct democracy has attracted increasing public and scholarly interest, important questions remain about whether initiative and referendum campaigns enable voters to make coherent choices. Previous studies in the United States have highlighted the 'educative effects' of direct democracy (see, for example, Smith and Tolbert 2004), but few have examined how and through what channels voters form their opinions during campaigns. This paper addresses this gap by examining the processes through which citizens learn and align their votes with policy arguments and party recommendations over the course of direct democratic campaigns.

Drawing on dual-process theories from social psychology (Eagly and Chaiken 1993; Petty and Cacioppo 1986), recent scholarship suggests two main pathways for opinion formation in direct democratic contexts (Barbieri et al. 2025; Boudreau and MacKenzie 2014; Bullock 2011; Colombo and Kriesi 2017; Kriesi 2005; Nai 2014): heuristic and systematic processing. Heuristic processing relies on shortcuts, such as following the voting recommendation of one's preferred party, while systematic processing engages voters in a more sophisticated treatment of political information provided during referendum or initiative campaigns. This article aligns with the view that campaigns foster voter learning and coherence in decision making (see, for example, Arceneaux

2006; Hobolt 2009; Kriesi 2005; 2012a; Lupia 1994; Selb et al. 2009). Consequently, we build a comprehensive model that combines the two pathways of information processing. We focus on these two dimensions because they capture distinct but equally important components of informed decision making in direct democratic settings: party cues help voters to translate broader political orientations into concrete choices, while policy arguments speak to the ability to reason about issue content. Both represent meaningful forms of opinion formation in the context of complex ballot measures.

Our first set of hypotheses proposes that, as the campaign unfolds and voting day approaches, voters become more knowledgeable about party cues and more engaged with policy arguments both in favor of and against a given ballot measure. We similarly expect that the likelihood of voters aligning their vote with their preferred party's recommendation – what we refer to as *in-line voting* – increases over the course of the campaign. A similar pattern is hypothesized for *consistent voting*, defined as casting a vote that aligns with one's stance on the key pro- and contra-policy arguments related to the measure – that is, voting *Yes* when one supports the pro-arguments and rejects the contra-arguments, and voting *No* when one rejects the pro-arguments and supports the contra-arguments. Our second set of hypotheses links these learning processes to voting behavior. Specifically, we posit that increased knowledge of party cues leads to a rise in in-line voting, while a greater ability to take a position on policy arguments fosters more consistent voting.

We test these two sets of hypotheses on two citizen-sponsored initiatives in California (Propositions 26 and 27 on sports betting) and two referendums in Switzerland (introduction of the Organisation for Economic Co-operation and Development (OECD) minimum tax rate and revision of the Climate law). California and Switzerland share an extensive experience in direct democracy, but differ with respect to elite involvement in direct democratic processes (Kriesi 2009). This, together with the variety of the four ballot measures under consideration, allows us to test our hypotheses in a range of situations.

A common weakness in the literature on both sides of the Atlantic is the lack of attention to the dynamics of opinion formation. To capture the day-to-day dynamics of how voters engage with information and form opinions during direct democratic campaigns, we rely on rolling cross-section (RCS) data. The RCS design has been used in some national election studies (see, for example, Johnston and Brady 2002; Johnston et al. 2014; Partheymüller and Johnston 2022; Schmitt-Beck and Staudt 2022), but very rarely in direct democratic campaigns (for exceptions, see Faas 2015; Schoen et al. 2011), and it has never been applied to a comparative study of within-campaign dynamics. To assess these dynamics, we conduct both an aggregate-level and an individual-level analysis of daily data. At the individual level, we fit structural equation models that test the mediating effects of knowledge gains on in-line and consistent voting.

## Literature Review

Extensive research on electoral campaigns has shown that they are critical moments for political learning (Arceneaux 2006; Brady et al. 2006; Hansen and Pedersen 2014; Holbrook 1996). While much of this literature focuses on party or candidate elections, its insights are also relevant to direct democratic contexts. Like electoral campaigns, direct democratic campaigns offer structured opportunities for citizens to encounter political information and form an opinion. However, they also differ in key ways – for example, their single-issue character, the binary architecture of the choice (Yes v. No), and the general unfamiliarity of ballot measures (de Vreese 2007). This latter point is particularly important, as it may heighten opinion volatility during referendums due to less entrenched attitudes (Farrell and Schmitt-Beck 2002; LeDuc 2002).

In the United States, an important stream of literature highlights the 'educative effects' of the availability and use of direct democratic institutions (Smith and Tolbert 2004), which have a positive impact on voters' political knowledge, interest in politics, efficacy, and turnout (Bowler and Donovan 1998; Smith and Tolbert 2004; Smith 2001; 2002); for a diverging view, see Barth

et al. (2020), Dyck and Lasher (2009), and Schlozman and Yohai (2008). However, only a few studies have examined the dynamics of opinion formation during initiative campaigns. Moreover, these studies focus mainly on the effects of ballot characteristics and campaign activities on mobilization and participation – in presidential, mid-term, local, or initiative elections (Donovan et al. 2009; Dyck and Seabrook 2010; Hillygus 2005; Niven 2004; Parry et al. 2008; Tolbert et al. 2009); they do not examine whether and to what extent campaigns help voters to learn about ballot measures and contribute to the quality of their voting decision.

As the country with the most experience in direct legislation at the national level, Switzerland is often referred to as a ‘laboratory’ (Kriesi 2005; Sciarini and Tresch 2024). Accordingly, there is a rich literature on campaign effects and vote choice in direct democratic votes. A first set of studies has applied Zaller’s (1992) model of opinion formation to post-referendum survey data, supporting the view that reception and acceptance of elite communication depends on the interaction between voters’ level of political awareness and their partisan predispositions (Bützer and Marquis 2002; Kriesi 2005; Marquis and Sciarini 1999; Sciarini and Tresch 2011). A second aspect of direct democracy that has been extensively researched is whether voters make decisions based on a systematic processing of information or on heuristics. Kriesi (2005) finds that the partisan heuristic, that is, voting in line with the recommendation of the political party to which the voter feels closest, is a well-developed strategy (see also Milic 2020). However, systematic decision making based on a more sophisticated processing of the information about the pros and cons of a ballot measure is also commonly used (Milic 2020).

Consistent with the view that US citizens base most of their decisions on simple and easily accessible information (Lupia and Matsusaka 2004; Magleby 1984), Lupia (1994) shows that the use of information shortcuts (knowledge of the voting recommendations of major insurance companies) enables low-competence voters to imitate the voting behavior of high-competence voters (see also Bowler and Donovan 1998). Several studies across Europe confirm that partisan heuristics and systematic processing play a role in vote choice, either separately (Elkink and Sinnott 2015; Suiter and Reidy 2013) or jointly (Bergman 2020; Hobolt 2005; 2007). These studies show that cue-taking and issue-based considerations can co-exist and jointly inform voting behavior.

Apart from dual process theories, another framework that is often used to assess the relative importance of party cues and policy information in voters’ decisions in direct democratic votes is the theory of partisan-motivated reasoning. According to this theory, voters process information with a partisan bias, that is, they tend to blindly follow the cue of their preferred party and ignore policy information. However, the empirical evidence is mixed. For example, an experimental study by Boudreau and MacKenzie (2014) finds that when voters receive substantial policy information that contradicts their party’s position on a given citizen-sponsored initiative, they tend to shift their opinions away from the party’s position and show opinions that are no different from the control group. In contrast, Barbieri et al. (2025) show that during a California initiative campaign, party cues override policy information even when contradicting initial vote intentions. Their pre-post experiment demonstrates that partisan-motivated reasoning shapes opinion change, especially among voters with weak prior attitudes and strong party ties.

The studies mentioned so far are based on post-election surveys or on experimental surveys, and are static in nature – for an exception, see Slothuus & Bisgaard (2021). On the one hand, studies based on post-election surveys cannot, by definition, capture campaign-specific shifts in public opinion. On the other hand, while experimental studies help to solve the problem of causal attribution, they cannot create real campaign stimuli, and thus identify potential rather than actual effects (Brady et al. 2006).

To assess the dynamic nature of opinion formation, some studies have turned to panel survey data (Bernhard 2018; Colombo and Kriesi 2017; Kriesi 2012b; Selb et al. 2009). They highlight the high degree of instability of individuals’ voting intentions. Bernhard (2018) finds that post-campaign levels of knowledge about specific ballot measures are higher than pre-campaign levels. Relatedly, Selb et al. (2009) show that referendum campaigns help citizens to adjust their vote

intentions to their partisan orientation (see also Kriesi 2012b). This partisan alignment, interpreted as a sign of cue taking, is helpful for all voters, and especially among voters who are ambivalent at the outset of the campaign. Testing the claim of motivated reasoning theory in the Swiss context, Colombo and Kriesi (2017) find that both policy arguments and party cues influence vote intentions, but that voters tend to align their position on arguments with the position of their preferred party during the campaign. Therefore, party cues influence vote choice directly and indirectly, by shaping how arguments are processed.

Data from a panel survey conducted during the 2016 Italian constitutional referendum in Italy address the dynamics of heuristic versus systematic processing during referendum campaigns, but they do *not* focus on party cues. Instead, they test the role of the government trust heuristic (de Angelis et al. 2020) and the status quo heuristic (Morisi et al. 2021). The former study highlights the overall predominance of government cues while also underscoring the complementary role of systematic processing across different voter types. The latter also provides a nuanced perspective, showing that policy information attenuates the influence of cues, particularly among right-wing voters.

In sum, while existing studies have shown that both party cues and policy arguments influence voting choice in direct democratic contexts, the relationship between the two remains theoretically and empirically ambiguous. Some evidence points to their co-existence, but the underlying mechanisms are not yet fully understood. In this study, we bring party-based and argument-based voting together in a single analytical framework that also integrates voters' political knowledge, allowing us to assess how these different pathways contribute to voters' decision making. Most importantly, we move beyond static designs by leveraging RCS data to examine the dynamics of opinion formation throughout the campaign. This enables us to trace how voters come to align with cues and arguments over time, offering new insights into the foundations of voting.

## Hypotheses

Democratic campaigns are information-rich events that provide voters with the opportunity to learn about the ballot measures at stake and thus have an enlightenment effect (Bernhard 2018; Bowler and Donovan 2002; Kriesi 2012a; Selb et al. 2009). This tends to mitigate voters' initial lack of knowledge regarding the often unfamiliar and complex ballot measures (Bergman 2020; Bowler 2015; Hobolt 2007), thereby reducing attitudinal uncertainty and enabling voters to make decisions aligned with their predispositions (Bowler et al. 2020; Dermont and Stadelmann-Steffen 2019; Hobolt 2005; Selb et al. 2009).

Specifically, according to dual-process theories, initiative and referendum campaigns can have two types of informational effects. First, following the heuristic path of information processing, campaigns can help voters identify which political parties support or oppose the ballot measure, and thus learn their preferred party's voting recommendation (Bowler and Donovan 2002, Denver 2002, Selb et al. 2009). Second, following the systematic path, campaigns provide voters with detailed information about the strengths and weaknesses of ballot measures (Bowler 2015; Colombo and Kriesi 2017). Over time, an increasing number of voters are likely to recognize their preferred party's cue and gain awareness of the arguments for and against ballot measures. These insights inform the first two hypotheses:

**HYPOTHESIS 1a.** Voters' knowledge of their preferred party's voting recommendations increases over the course of the campaign.

**HYPOTHESIS 1b.** Voters' ability to take side on the arguments for and against a ballot measure increases over the course of the campaign.

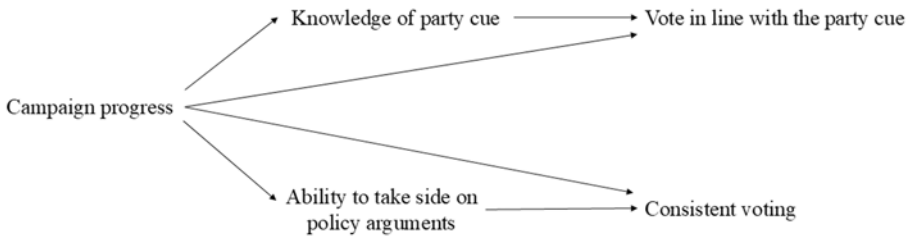


Figure 1. Mediation model.

Turning to the dynamics of vote intentions, party endorsements can have a significant impact on voters' choices (Kriesi 2005; Selb et al. 2009; Walder and Strijbis 2022). As Kriesi (2005) bluntly puts it in the Swiss context, party cue is 'the quintessential shortcut in direct democratic votes'. In a context of limited information, party cues can be used as heuristics to sort through the information demands and help voters make reasonable decisions (Hobolt 2007, Milic 2020, Suiter and Reidy 2015). To the same extent that campaigns help voters to learn about their preferred party's vote recommendation (hypothesis 1a), they should also help them to cast a vote that is in line with their preferred party's cue.

**HYPOTHESIS 1c.** Voters' ability to vote in line with the vote recommendation of their preferred party ('in-line voting') increases over the course of the campaign.

Similarly, campaigns may help voters to cast a consistent vote, that is, a vote that is consistent with their position on the arguments for and against a given ballot measure (Lanz and Nai 2015; Lauener 2020; Milic 2012). Indeed, as a campaign unfolds, its intensity grows, and policy arguments become increasingly visible to the public. This makes it easier to assess the pros and cons of the ballot measure (Bowler 2015; Kam 2006). Moreover, the increase in the amount of accessible information motivates voters to think about the issue and thus to make a decision with a higher degree of elaboration (Hobolt 2005). As a result, by the end of the campaign, voters should be better able to cast a vote consistent with their underlying policy preferences.<sup>1</sup>

**HYPOTHESIS 1d.** Voters' ability to cast a vote that is consistent with their position on the pro and con arguments ('consistent voting') increases over the course of the campaign.

Finally, it should be clear from the development above that the knowledge variables and in-line or consistent voting are closely related. As election day approaches, greater knowledge of party cues increases the likelihood of in-line voting. Similarly, as voters' knowledge of policy arguments increases over time, they are more likely to vote consistently with their argument position. In other words, knowledge gains act as a mediator in the relationship between time as a measure of campaign progress, on the one hand, and in-line and consistent voting, on the other (see Figure 1).

**HYPOTHESIS 2a.** Increased knowledge of the party cue over the course of the campaign contributes to an increase in voting in line with the cue of one's preferred party.

**HYPOTHESIS 2b.** The increased ability to take sides on the pro and con policy arguments over the course of the campaign contributes to an increase in voting in accordance with one's position on policy arguments.

<sup>1</sup>In this sense, this systematic path is close to the logic of proximity voting (Hobolt 2007).

In this paper, we do not see the heuristic and systematic paths as mutually exclusive. According to our more realistic view, voters may draw on both party cues *and* substantive arguments simultaneously (Kriesi 2005, Milic 2020).

## Methodological Framework

### Cases

Our analysis is based on four cases drawn from two distinct institutional contexts, each featuring two direct democratic votes on different topics. The central question we pose is whether, despite these contextual and topical differences, similar patterns of opinion formation emerge – specifically, increases in issue-specific knowledge, and consequently, in in-line and consistent voting.

Starting with the institutional context, according to Kriesi's (2009) threefold typology, the citizen-sponsored initiatives at work in California represent the unmediated (or 'populist') variant of direct democracy. In this variant, popular votes follow a bottom-up logic. Ballot measures emanate from demands raised by interest groups or initiative committees, which helps interest groups and social movements bypass state authorities (governors and legislatures). Moreover, legal restrictions on involvement, support, and spending mean that state governments do not actively engage in initiative campaigns, in which interest groups take the lead and political parties play a secondary role.

In contrast, the Swiss direct democracy belongs to the 'mediated' variant, where referendum and initiative votes are more tightly controlled by the elite – government, legislature, and governing parties (Kriesi 2009).<sup>2</sup> In particular, unlike in US states, the government and governing parties actively campaign for or against ballot measures in order to influence voters' decisions.<sup>3</sup> The role of interest groups is less visible and operates mainly through the financial support of political parties' campaign activities (for example by funding ads in newspapers or on the internet).

Furthermore, while direct democracy is cognitively demanding in both California and Switzerland, the sources of complexity differ. In California, direct democratic votes are held concurrently with presidential, midterm, and/or state-level elections. The simultaneity of multiple ballot measures and multiple electoral contests requires voters to make numerous decisions at once (Bowler 2015). In such a context, the challenge lies not only in cognitive complexity but also in time constraints, as voters must be motivated to engage with multiple elections within a short timeframe. Consistent with this, the prevailing view in the United States is that citizens tend to have limited knowledge about the ballot measures submitted to them (Barth et al. 2020; Boudreau and MacKenzie 2021; Bowler and Donovan 1998; Lupia 1994). In Switzerland, by contrast, direct democratic votes occur outside the context of national elections, but in some cantons, they may coincide with state-level or local elections. Moreover, federal ballots are held more frequently than in US states: citizens are called to the polls three to four times per year to vote on one or several federal ballot measures – and often on additional local measures as well. This requires long-term, sustained motivation.

Turning to the characterization of ballot measures, in California, we study two 'combined initiated constitutional amendments and state statutes' to legalize sports betting that were

<sup>2</sup>According to Kriesi's (2009) typology, the Swiss form of direct democracy is thus an intermediate category between the unmediated variant and the third, 'plebiscitary variant' – which is not covered by the present study. In the plebiscitary variant, at work for example in France or in the United Kingdom, only the executive can put a policy proposal to a vote by means of a referendum. According to this top-down logic, the referendum represents a unilateral instrument in the hands of the executive, which additionally plays a leading role in the campaign. This generates different incentives among voters, i.e. whether to vote on the policy proposal or for or against the executive asking for support.

<sup>3</sup>Moreover, and also unlike in US states, the Swiss government and parliament takes side on initiatives and may even respond to them with counter-proposals.



submitted to voters in parallel to the November 2022 midterm elections.<sup>4</sup> The two ballot measures competed against each other. Proposition 26 aimed to legalize sports betting exclusively in Native American casinos, while Proposition 27 aimed to legalize online sports betting – and to create in parallel a homelessness prevention fund. The campaign became a competition among interest groups aiming to gain exclusive control over a future market of tens of millions of consumers. It resulted in the most expensive initiative campaign ever in California (\$400 million).<sup>5</sup> While the two ballot measures addressed the same policy issue and had some similarities in content, they differed in terms of partisan support. The Republicans opposed both ballot measures, whereas the Democrats opposed Proposition 27 but did not take a position on Proposition 26. Ultimately, voters overwhelmingly rejected both ballot measures (67 per cent against Proposition 26 and 82.3 per cent against Proposition 27).

In Switzerland, our study covers two referendums held in June 2023. The first was a constitutional amendment and was therefore subject to a mandatory referendum. The amendment, promoted by the government and parliament, aimed to implement a global tax reform initiated by the OECD and the G20, by introducing a minimum tax of 15 per cent on large multinational corporations. All parties except the Socialist party supported the reform, while the Greens let the freedom of vote. The broad partisan consensus in favor of a rather technical and unfamiliar ballot measure, together with the mainly platonic socialist opposition, resulted in a low-intensity and highly one-sided referendum campaign.<sup>6</sup>

The second vote resulted from a referendum launched by the Swiss People's Party against the revision of the Climate law. The revision created a comprehensive framework to achieve climate neutrality by 2050 and increase energy security through various means and incentives, such as reducing fossil fuel consumption by subsidizing building insulation and promoting renewable energies. Of the six main parties, only the Swiss People's Party advocated a No vote, but it invested significant resources in the referendum campaign, which reached a fairly high level of intensity by Swiss standards.<sup>7</sup> In the end, both proposals were approved by the people, with an overwhelming support to the OECD reform (78.5 per cent Yes), and a large margin for the Climate law (59.1 per cent Yes).

Overall, then, in addition to the differences between the two direct democratic contexts described above, the differences between ballot measures and related contexts (institutional type, campaigns, and configuration of party cues) provide an opportunity to examine the dynamics of citizens' attitudes in a variety of situations.

### RCS Survey Data

This paper is based on the second wave of a three-wave panel survey conducted in California and Switzerland, with the first wave taking place before the campaign, the second during the campaign, and the third after the vote.<sup>8</sup> The second wave took the form of a RCS. Each day during the forty days before the vote, we drew a random sample of wave 1 respondents (see Appendix A for sample representativeness). The average number of respondents per day was forty (SD = 13) in California and fifty-nine (SD = 13) in Switzerland, for a total of 1,624 and 2,408 interviews, respectively.

<sup>4</sup>In addition, five other ballot measures were put to the ballot, in parallel to mid-term elections and a range of state-level elections.

<sup>5</sup>After spending tens of millions of dollars, the promoters of Proposition 27 stopped campaigning in the final weeks of the campaign, based on polls that predicted an overwhelming defeat. See <https://abc7news.com/prop-27-california-sports-betting-proposition-tv-ads-yes-on/12248218/> and <https://www.npr.org/2022/11/09/1133986282/california-gambling-prop-26-27-midterm-results>.

<sup>6</sup>[https://anneepolitique.swiss/fr/pages/campaign\\_research](https://anneepolitique.swiss/fr/pages/campaign_research). 94 per cent of newspaper ads were in favor of the reform.

<sup>7</sup>[https://anneepolitique.swiss/fr/pages/campaign\\_research](https://anneepolitique.swiss/fr/pages/campaign_research). Despite the active opposition of the Swiss People's Party, the Yes camp clearly dominated the campaign according to newspaper ads (68 per cent against 32 per cent).

<sup>8</sup>The initial sample was drawn from an online panel with quotas on gender, age, education, and geographic residence. In Switzerland, the survey covered the three linguistic (German-, French-, and Italian-speaking) communities.

The RCS design is an appropriate tool for tracking changes and trends in public opinion over the course of a campaign, and offers some advantages over panel studies (Brady et al. 2006). In particular, as a result of the coarse granularity of the panel, observed changes between two waves may be due to events occurring in-between; the greater the gap between waves, the harder it is to identify campaign effects as competing explanations accumulate. RCS's daily interviews help overcome the problem, providing detailed information on the dynamics of knowledge acquisition and vote intentions.<sup>9</sup>

## Measures

A key factor in this study is the time that elapses as the campaign progresses, specifically the date of each respondent's interview during the RCS. This is expressed as a continuous variable ranging from -40 to 0, with 0 being the day closest to the election day. We use *time* as a variable in the remainder of the paper, bearing in mind that time is our measure of campaign progress.

The first mediator is *knowledge of party cue*. It is based on two questions. In the first wave of the panel, respondents were asked which party they felt closest to (see Appendix A for survey questions and descriptive statistics). In wave 2 (RCS), respondents were then asked if they knew the cue of their preferred party with the following question: 'To your knowledge, what is the [preferred party's] vote recommendation for the following ballot measures?' The variable is coded 1 if the respondent gave a correct answer and 0 if they gave an incorrect answer or did not know.<sup>10</sup> Note that we focus only on respondents who indicated a preferred party; by definition, respondents who did not feel close to any party could not be asked about the voting recommendation of their 'preferred party'. The proportion of partisans is 75 per cent in Switzerland (including the six major parties) and 78 per cent in California.

The second mediator is the voter's *ability to take a position on policy arguments*. For each ballot measure, we formulated six arguments – three in favor and three against – reflecting the positions promoted by the Yes and No camps during the referendum or initiative campaigns (see Appendix A for the full list of arguments).<sup>11</sup> To mitigate the risk of ex-post rationalization – that is, the tendency of respondents to align their evaluation of policy arguments with their vote intention or vote choice – we carefully formulated the arguments to avoid any direct cues with a particular voting position, ensuring that respondents could not readily infer whether an argument supported or opposed the measure. Moreover, we deliberately withheld information about the source of each argument – such as the sponsoring political actors behind the initiative in California or the referendum in Switzerland – to prevent respondents from relying on source cues when evaluating the arguments. Finally, we presented the argument-related questions prior to the vote intention or choice question, thereby avoiding the risk that voters would adjust their evaluations of arguments to conform with their stated vote.

All six argument items followed the same standardized question format: 'To what extent do you agree or disagree with the following arguments regarding [name of ballot measure]?', with responses ranging from 'strongly agree' to 'strongly disagree', as well as a 'don't know' option. We sum the number of 'don't know' responses provided by respondents for each ballot measure and use this as a measure of voters' ability to take side on policy arguments.

<sup>9</sup>Since the RCS constitutes a single wave of our panel study, we have only one observation per respondent and are therefore unable to assess opinion stability or change at the individual level (e.g., activation, conversion, reinforcement).

<sup>10</sup>Strictly speaking, accurately reporting one's party's voting recommendation does not, in itself, confirm actual knowledge of the party cue. Voters may have inferred or guessed the correct stance without direct exposure to the official position.

<sup>11</sup>The policy arguments were derived from a close reading of campaign materials disseminated by both sides during the referendum or initiative campaigns. These materials included pamphlets, official statements, and ads published by political actors (parties and interest groups) on their websites, in newspapers (in Switzerland), and on television (in California). To assess whether the arguments are correlated, we conducted reliability tests for each ballot measure, evaluating the three pro and three contra arguments separately. These tests were performed for each week of the RCS to examine potential changes over time. The results meet standard reliability thresholds (the average of Cronbach's alpha is 0.72) and indicate consistency over time.



The first dependent variable measures whether the respondent's vote intention or decision<sup>12</sup> is in line with their preferred party's recommendation. This variable is coded as 1 if the respondent's vote is in line with the recommendation and 0 if it is not.

The second dependent variable measures whether the respondent's vote is consistent with their opinion on policy arguments. This measure is based on the respondent's position on an argument scale ranging from -12 (extremely against) to 12 (extremely in favor) that summarizes their opinion on the six arguments per ballot measure mentioned above. For example, a respondent with a score of 12 'strongly agrees' with the three arguments in favor of the ballot measure and 'strongly disagrees' with the three arguments against the ballot measure. To derive our measure of voting according to position on the arguments, we match this scale to the respondent's vote intention/choice. The binary variable is coded 1 if the voting decision is consistent with the arguments and 0 if it is not. For example, if a respondent votes 'Yes' and is in favor of the ballot measure according to their position on the argument scale (for example position 7 on the scale), the variable is coded as 1. In contrast, the variable is coded as 0 if the respondent's vote is inconsistent with their opinion on arguments, that is, if they vote 'Yes' ('No') but are against (for) the ballot measure according to their position on the argument scale. More specifically, on the argument scale, we consider respondents to be in favor of the ballot measure if they are between +2 and +12 and against if they are between -2 and -12. The vote of respondents with an ambiguous position on the arguments scale (position between -2 and +2) is coded as inconsistent. The same applies to those (few) respondents whose vote intention is undecided.

As control variables, we first include a measure of respondents' issue-specific knowledge based on factual knowledge questions about each ballot proposal – two questions in California and three in Switzerland. This issue-specific knowledge scale represents the number of correct answers given by the respondent. Second, we measure the subjective importance that respondents assign to each proposition on a scale of 0–10, where 0 is 'not at all important' and 10 is 'very important'. We also include age, gender, and education level as socio-demographic controls.

### Empirical Strategy

Our empirical strategy consists of two steps, each based on between-individual analyses of daily data. First, to test the hypotheses H1a to H1d, we conduct an analysis at the aggregate level. That is, we aggregate the data for each day of the RCS to obtain the percentages or means for each variable of interest. We then plot these values over time and derive the best-fit lines using linear models.<sup>13</sup>

Second, to test hypotheses H2a and H2b at the individual level, we specify a structural equation model (SEM) for each ballot measure. To build this model, we start with four equations to predict the two mediators and the two outcomes:

$$\begin{aligned}\text{KnowledgePartyCue} &= a_1 \cdot \text{time} + X \cdot \beta_1 + \varepsilon_1 \\ \text{Inline} &= c_1 \cdot \text{time} + b_1 \cdot \text{KnowledgePartyCue} + X \cdot \beta_2 + \varepsilon_2 \\ \text{Arguments} &= a_2 \cdot \text{time} + X \cdot \beta_3 + \varepsilon_3 \\ \text{Consistent} &= c_2 \cdot \text{time} + b_2 \cdot \text{Arguments} + X \cdot \beta_4 + \varepsilon_4\end{aligned}$$

<sup>12</sup>Because of the possibility of early voting by mail, respondents were first asked if they had already received their voting materials and, if yes, if they had already voted. If so, they were asked about their vote choice. If not, they were asked about their voting intention. The two measures were combined to obtain the voter's decision on each ballot measure: Yes or No. The percentage of respondents who had already voted at the time of their wave 2 interview is 24 per cent in California and 33 per cent in Switzerland.

<sup>13</sup>Since the effect of time may be non-linear, we also estimated generalized additive models (GAMs). The results show effective degrees of freedom very close or equal to 1, indicating linear effects.

**Table 1.** Proportion of in-line and consistent voting in the four ballot measures

Vote	Ballot			
	Climate	OECD	Proposition 26	Proposition 27
In-line and consistent	46.4	32.6	32.9 [8.0]	47.0
In-line but not consistent	24.2	26.6	44.7 [9.2]	16.1
Not in-line but consistent	9.4	11.7	5.0 [29.9]	12.5
Not in-line and not consistent	20.0	29.1	17.4 [53.0]	24.4
Total % (N)	100 (1,588)	100 (1,559)	100 (1,169)	100 (1,179)

where *KnowledgePartyCue* is the knowledge of the party cue, *Arguments* is voters’ ability to take side on policy arguments (number of ‘don’t knows’), *In-line* is voting in line with the party cue, *Consistent* is voting consistent with one’s positions on arguments, *a*, *b*, and *c* letters denote direct paths,  $\beta$  indicates parameters, *X* is a vector representing the control variables, and  $\varepsilon$  the error terms.

To account for the non-independence between the mediators and the outcomes, we also introduce the following covariance terms into the model:

$$\begin{aligned} \text{Cov}(\text{KnowledgePartyCue}, \text{Arguments}) &\neq 0 \\ \text{Cov}(\text{Inline}, \text{Consistent}) &\neq 0 \end{aligned}$$

We then estimated the following indirect and total effects corresponding to H2a and H2b:

$$\begin{aligned} \text{Indirect path: time} &\rightarrow \text{KnowledgePartyCue} \rightarrow \text{Inline} = a_1 \cdot b_1 \\ \text{Indirect path: time} &\rightarrow \text{Arguments} \rightarrow \text{Consistent} = a_2 \cdot b_2 \\ \text{Total effect Inline} &= c_1 + (a_1 \cdot b_1) \\ \text{Total effect Consistent} &= c_2 + (a_2 \cdot b_2) \end{aligned}$$

This SEM allows us to test for direct and indirect effects, considering that the learning mechanisms, as well as the likelihood of in-line and consistent voting, may be correlated.

Findings

Aggregate-Level Analysis

Before testing our hypotheses, we present a simple cross-tabulation of the two dependent variables (Table 1). For the Climate law and Proposition 27, in-line and consistent voting go largely hand in hand: nearly half of voters cast votes that were both in line with their party cue and consistent with their opinions on arguments. The corresponding proportion is lower for the OECD Act and Proposition 26, yet it still accounts for approximately one-third of cases. At the other end of the typology, the share of voters who cast a vote that was neither in-line nor consistent is also substantial – around one-fifth, with some variation across votes. Finally, for all four votes, a significant proportion of voters – ranging from 5 per cent on the Climate Law to 45 per cent on Proposition 26 – voted either in-line but not consistently, or consistently but not in-line.

A caveat is in order regarding Proposition 26. Because the Democratic Party took no official position on this measure, any vote choice can technically be interpreted as in-line with the party’s stance. This explains the very high share of in-line voting reported in Table 1 (78 per cent in total). However, this should not be understood as a genuine ‘in-line’ vote – at least not in the same sense as for the other three ballot measures. One could even argue that in the absence of a party cue, Democratic voters could not have cast an in-line vote at all.

To account for this ambiguity, Table 1 includes supplementary figures (shown in square brackets) based on an alternative, more stringent definition of in-line voting, under which all

Democratic votes on Proposition 26 are considered not in-line. Of course, this stricter classification alters the results considerably: a majority of voters cast ballots that were neither in-line nor consistent, and only a small minority (8 per cent) – only Republican voters – cast votes that were both in-line and consistent.<sup>14</sup>

Figure 2(a) shows the evolution (by day) of the percentage of voters who know the cue of the party they feel close to for each ballot measure. Figures 2(b), 2(c), and 2(d) do the same for the ability to take side on policy arguments, the ability to vote in line with the party cue, and the ability to vote consistently, respectively.

Starting with the *knowledge of party cues* (Figure 2(a)), the four figures show an increase in the share of voters correctly identifying their preferred party's vote recommendation. The increase is, however, small for Proposition 26, but still statistically significant (see Appendix B1 for the regression tables). The lack of vote recommendation for Proposition 26 by the Democrats, which has remained unknown to most party supporters, explains this result. Despite the learning process, a majority of responses about the party cues for the two Californian ballot measures were still incorrect the day before the election. In Switzerland, by contrast, the proportion of respondents who knew the vote recommendation was just over 50 per cent at the end of the campaign for the OECD-led amendment and peaked on the Climate law (80 per cent). In the latter case, a majority of correct answers was already present at the start of the study period.

The negative trend in the *number of 'don't knows'* on the six argument questions also delivers a positive message (Figure 2(b)): as time passes, voters have been increasingly able to take side on arguments. For this variable, the evolution over time is significant for all four ballots. By the end of the campaign, the average number of 'don't knows' was far less than one.

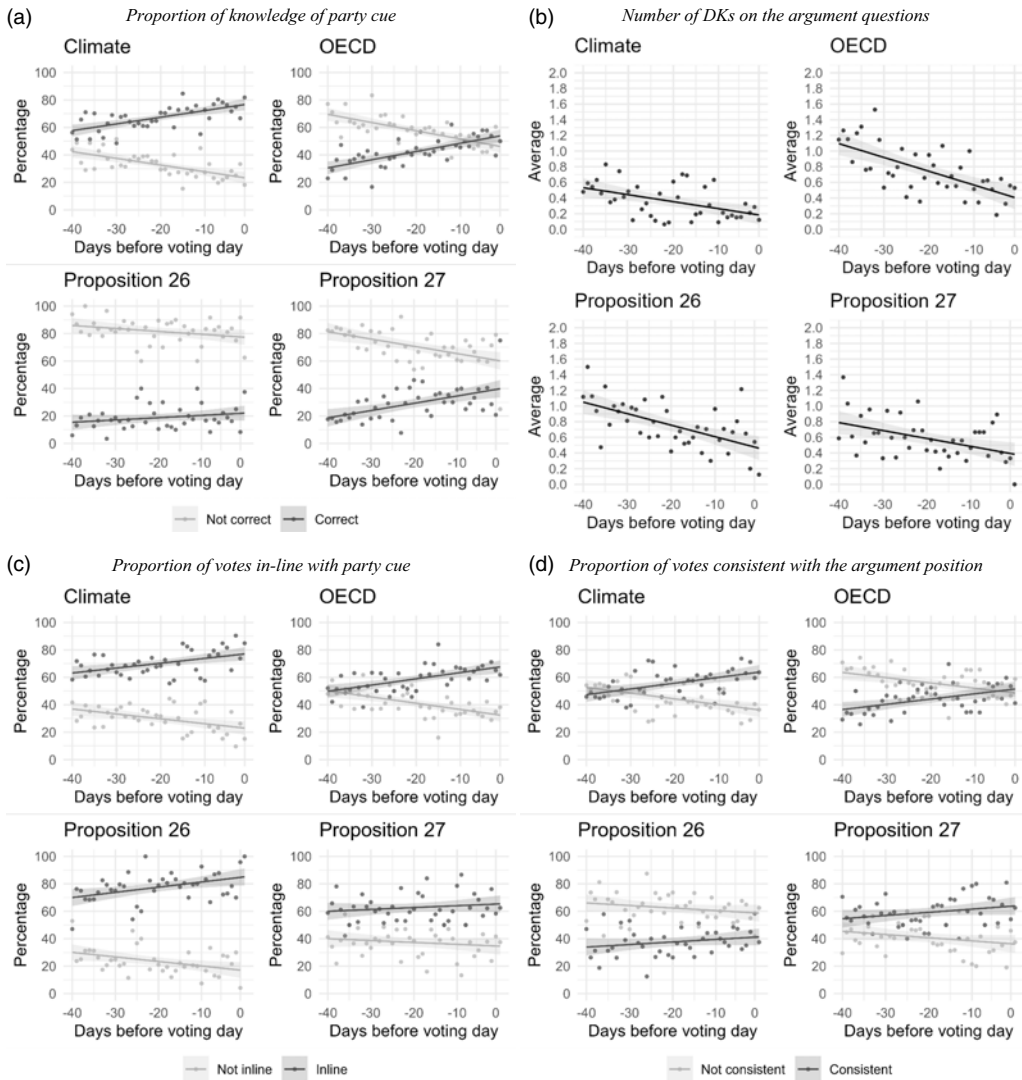
In Switzerland, the increase of *in-line voting* (Figure 2(c)) is significant for both the Climate law and the OECD-led reform, but with differences in levels between the two ballots: for the Climate law, in-line voting already outweighed non-in-line voting forty days before the election day, whereas for the OECD act this became true during the campaign.

In California, the results for Proposition 27 show a slight increase in in-line voting over time, but the increase fails to reach statistical significance ( $p = 0.15$ ). The high proportion of in-line voting, despite low levels of party cue knowledge (Figure 2(a)), suggests that the two phenomena do not necessarily go hand in hand. On the one hand, voters who are unaware of their preferred party's cue may still vote in accordance with it, owing to shared ideological orientations or foundational values. On the other hand, in some cases, the correspondence between a voter's choice and the party's recommendation may arise from unrelated factors, such as a status quo bias or mere coincidence.

In the case of Proposition 26, caution is again warranted when interpreting the results due to the Democrats' (largely unnoticed) free vote recommendation. While the proportion of Democratic supporters voting in accordance with their party's recommendation is very high – and increases over the course of the campaign – this pattern is largely an artifact of our permissive coding of in-line voting for this particular ballot measure.<sup>15</sup>

<sup>14</sup>The peculiarity of in-line voting on Proposition 26 must be kept in mind throughout the analysis. In what follows, we adopt the broader definition of in-line voting for this measure (all Democrats voted in-line), while also presenting robustness checks based on the stricter definition (all Democrats voted *not* in-line, see Appendix C2a), as well as excluding Democratic voters from the analysis of Proposition 26 (see Appendix C2b). Note further that a similar issue arises with Green Party voters on the OECD vote. Here, too, the party did not adopt a vote recommendation, and as a result, all Green votes are considered in-line by definition. However, as Green Party voters account for less than 10 per cent of the sample, their influence on aggregate outcomes is very small.

<sup>15</sup>As will become evident in the robustness test section, applying the alternative coding of in-line voting described above – where all Democratic votes on Proposition 26 are treated as not in-line – does not reveal an increase in consistent voting over time (see Figure C2a.2c in the Appendix). Similarly, a separate robustness test focusing on Republican voters indicates only a modest rise in in-line voting over the course of the campaign (see Figure C2b.2c in the Appendix).



**Figure 2.** Evolution of voters' attitudes by day. (A) Proportion of knowledge of party cue. (B) Number of DKs on the argument questions. (C) Proportion of votes in-line with party cue. (D) Proportion of votes consistent with the argument position.

Finally, the figures for *consistent voting* (Figure 2(d)) show a positive trend. For all four ballot measures, the share of respondents who cast a vote consistent with their position on the argument scale significantly increased as the election day drew near. The increase is highest for the two Swiss ballots and lowest for Proposition 26. Further, we again observe differences across ballots with respect to the level of consistent voting. At the end of the campaign, an overwhelming majority of voters voted consistently on the Climate law and on Proposition 27. For the OECD provisions, however, the proportion of consistent and inconsistent votes was about the same, whereas the proportion of inconsistent votes still exceeded the proportion of consistent votes on Proposition 26.

Overall, the aggregate-level analysis supports hypotheses 1a to 1d. All four indicators (party cue knowledge, ability to take side on policy arguments, in-line voting, and consistent voting) increased over the course of the campaign, though notable differences in levels emerged across

ballot measures. In Switzerland, knowledge and in-line or consistent voting reached high levels by the end of the campaign for the Climate Act, whereas for the OECD Act this pattern applies mainly to ability to take side on arguments and in-line voting, but less so the party cue knowledge and consistent voting.

For Proposition 27, both the ability to take a position on arguments and the rate of consistent voting increased significantly over the course of the campaign. However, by the end of the campaign, a majority of voters still lacked knowledge of their preferred party's vote recommendation. The situation is even more complex for Proposition 26. Democratic voters largely remained unaware that their party had taken no official position, and the high share of in-line voting is, in fact, an optical illusion. Since Democratic voters had no party cue to rely on, one would expect them to base their vote on policy considerations. Yet, according to our data, a majority cast a vote that contradicted their argument position, that is, a vote misaligned with their underlying policy preferences.

### Individual-Level Analysis

While the aggregate-level analysis conducted so far provides information on the evolution over time of knowledge measures and in-line and consistent voting, it does not say anything about the possible relationships between these variables at the individual level. Therefore, we turn to a structural equation model as described in the Methodological Framework section.

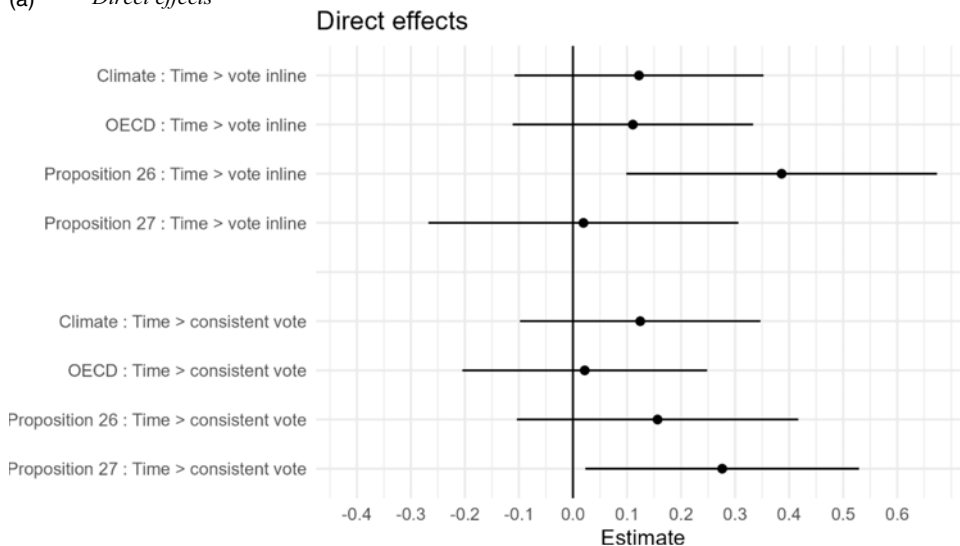
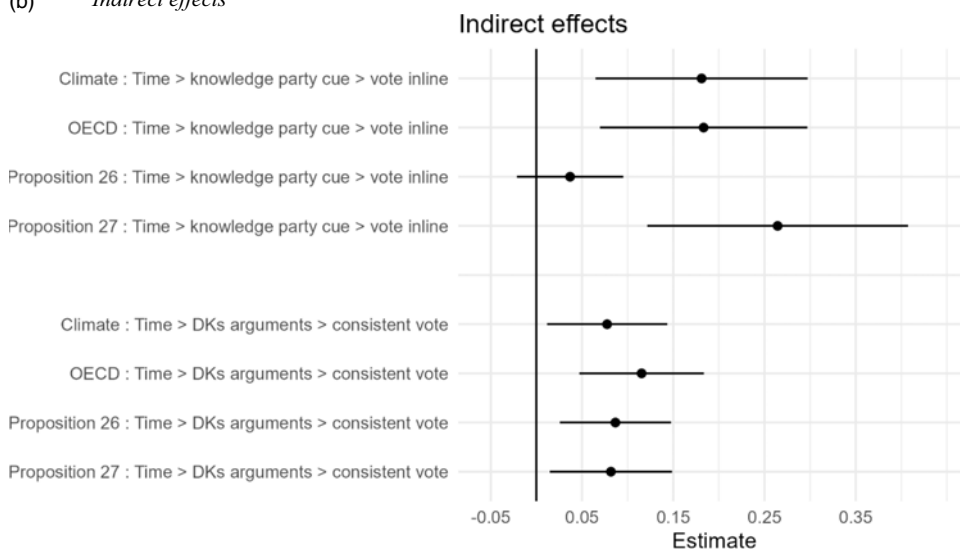
Starting with the direct effect of time – our measure of campaign progress – on in-line or consistent voting, there is no theoretical reason to expect that time *per se* would influence citizens' vote choice. Consistent with this expectation, Figure 3(a) shows no direct effect of time, except in one ambiguous case: in-line voting on Proposition 26. Figure 3(b), by contrast, supports hypotheses 2a and 2b that the effects of time on voters' ability to vote in-line or consistently operates indirectly, through the increase of knowledge. All effects but one are statistically significant, and all are in the expected direction: knowledge increases over time, which in turn increases in-line and consistent voting.

For in-line voting, the indirect effect is not significant for Proposition 26, which is again unsurprising given the lack of Democratic Party endorsement. For consistent voting, the indirect effect reaches statistical significance for all four ballots, and it has a similar magnitude in each case. Thus, both pathways of opinion formation (cue taking and policy information) are at work in our data. From a comparative perspective, it is noteworthy that the specific type of direct democracy at stake appears to have minimal impact. With the exception of the peculiar case of Proposition 26 (no cue from the Democrats), knowledge acquisition has the expected (virtuous) effects on the likelihood of in-line and consistent voting in both California and Switzerland. In that sense, our analysis suggests that initiative and referendum campaigns have the expected enlightening effect, helping voters to learn and cast votes aligned with their partisan orientation and policy preferences.

This positive conclusion is, however, tempered by the results of the aggregate-level analysis, which revealed some important differences across contexts and ballot measures regarding the degree of knowledge acquisition, and resulting degree of in-line and consistent voting.

### Robustness Tests

We conducted three robustness tests. First, the analyses presented thus far include all respondents, regardless of their intention to participate. To test the sensitivity of our findings, we restricted the sample to respondents who had either already voted or indicated they would 'certainly' vote. This excludes respondents who reported they would 'likely vote', 'likely not vote', or 'certainly not vote', as well as those who responded 'don't know'. The results remain unchanged under this restriction (see Figures C1.2a to C1.2d and C1.3 in Appendix C1).

(a) *Direct effects*(b) *Indirect effects*

**Figure 3.** Mediation analyses of in-line voting and consistent voting, direct and indirect effects. (A) Direct effects. (B) Indirect effects.

Second, we take a closer look at the ambiguous case of in-line voting on Proposition 26 to address the absence of a vote recommendation from the Democratic Party, by testing the implications of an alternative coding, in which all Democratic voters are classified as casting a *not* in-line vote. As shown in Figure C2a.2c, this alternative approach unsurprisingly produces a reversed pattern compared to Figure 2(c), resulting in a very high proportion of not in-line voting – and no trend over time. However, and more importantly, the results of the mediation analysis remain unchanged: the indirect effect of time on in-line voting for Proposition 26 operating through knowledge of party cues remains insignificant.

Additionally, we conducted a further robustness test by excluding Democratic voters entirely, thereby focusing solely on Republican respondents. Figure C2b.2c shows that the share of in-line



voters is roughly equal to the share of not in-line voters, with only a modest increase in in-line voting observed over the course of the campaign. Interestingly, despite the small number of Republican voters in California, which results in wide confidence intervals, the indirect effect operating through knowledge of party cues becomes significantly positive. This finding further underscores the importance of knowing (or at least being able to infer) the cue of one's preferred party in order to cast an in-line vote, assuming such a party cue is available in the first place.

Third, our measure of consistent voting considers respondents with a position between  $-2$  and  $2$  on the argument scale to have ambiguous preferences and automatically assigns them to the group of inconsistent voters. To assess the extent to which the results are sensitive to these thresholds, we conducted two tests. The first adopts a more permissive coding strategy for consistent voting, classifying as consistent those voters who favor the ballot measure (those who have a value above  $0$  on the argument scale) and vote Yes, as well as those who oppose it (value below  $0$ ) and vote No. Inconsistent voters are those who do not meet this criterion, along with respondents positioned at  $0$  on the argument scale, regardless of their vote. As expected, this more lenient approach leads to higher levels of consistent voting (see Figure C3a.2d in the Appendix). The second test, by contrast, employs a more restrictive coding strategy, limiting the category of consistent voters to respondents positioned between  $-6$  and  $-12$  on the argument scale who vote No, and those between  $+6$  and  $+12$  who vote Yes – thus, respondents located between  $-5$  and  $+5$  are classified *ex ante* as inconsistent voters. Again unsurprisingly, this stricter approach yields lower levels of consistent voting (see Figure C3b.2d). Crucially, however, neither specification alters the results of the mediation analysis (see Figures C3a.3 and C3b.3).

## Conclusion

This paper examines how voters' knowledge and attitudes evolve during initiative and referendum campaigns in two different direct democratic contexts. Through a comparative analysis of two Californian initiatives on sports betting and two Swiss referendums on tax and climate policy, we offer insights into the dynamic nature of voter opinion formation in two different democratic settings. Our empirical approach using RCS survey data to examine how knowledge of party cues, voters' ability to take side on arguments, in-line voting, and consistent voting evolves in the run-up to the ballot represents a novel way of understanding voter decision making in direct democratic votes.

Our results provide both good and bad news with respect to voters' knowledge acquisition during campaigns and ability to vote in-line or consistently. On the one hand, the findings highlight several positive aspects of the dynamics of voter attitudes during campaigns. First, there is a clear pattern of increasing voter knowledge as campaigns progress. This trend is evidenced by the growing familiarity with party cues and policy arguments related to the ballot measures. Second, mediation models suggest an indirect effect of time on voters' ability to connect their underlying attitudes to their vote. As voters become more informed about the ballot measures during the campaign, their vote becomes more aligned with their knowledge of these measures. The dynamics of citizens' attitudes underscore the enlightening role of direct democratic campaigns, through both cue taking and processing of substantial policy information.

Despite the demanding nature of decision making in direct democracy and the complex environment in which it takes place, many voters show an ability to assimilate and use information over the course of a campaign. The result that voters are increasingly able to cast a vote consistent with their argument position, which holds in all four votes, is especially worth considering. Similarly, the expected increase in in-line voting resulting from voters' increased knowledge of their preferred party's cue holds for the three ballot measures where parties provided such a cue – the null result for Proposition 26 being due to a lack of party cue among Democrats.

The two pathways of opinion formation thus seem to work similarly in both the unmediated (Californian) and mediated (Swiss) variants of direct democracy.

On the other hand, some findings paint a more pessimistic picture of voters' skills. First, significant differences in knowledge levels were observed across both ballot measures and contexts. Presumably due to the stronger involvement of party elites, both party cue awareness and the degree of in-line voting were higher in Switzerland than in California by the end of the campaign. Moreover, while consistent voting reached similar levels on Proposition 27 and the two Swiss ballot measures, it was notably lower on Proposition 26. For Proposition 26, a majority of voters cast inconsistent votes, that is, their vote contradicted their argument position. This discrepancy may be attributable to the particularly complex electoral environment in California, where initiative elections are held concurrently with national and state candidate elections – contests that typically attract greater public attention – and where political parties play only a limited role in initiative campaigns. In contrast, our findings support the view that the Swiss context provides voters with a steady flow of arguments and voting cues, thereby 'allowing them, in principle to make enlightened choices – that is, choices which are in line with their preferences' (Kriesi 2012b: 239).

Second, the high proportion of voters aligning with party cues on Proposition 27 appears to be largely an optical illusion, as it coincides with low awareness of the cues themselves. Third, even in the more favorable Swiss context, our data reveal differences in the level of knowledge acquisition, as well as in the degree of in-line and consistent voting, between the controversial and intensively discussed Climate Law and the more technical, less mediatized OECD-related act.

Further, while we interpret the growing alignment with party cues as a sign of voter learning and coherent decision making, it could also reflect a disciplining effect where voters follow party lines in a more dogmatic or uncritical manner, potentially reinforcing polarization and inhibiting deliberation. Similarly, reliance on policy arguments is normatively desirable only if those arguments are well-founded and fact-based. In our case, the use of grounded, high-quality arguments provided to respondents supports the interpretation of these effects as indicative of substantive learning rather than misinformed reasoning.

Finally, despite – or perhaps because of – its pioneering character, a limitation of our study is that it covers only four ballot measures. A replication on other Californian and Swiss initiatives and referendums would help to gather finer-grained and more systematic insights into the respective role of ballot- and context-related factors. Further research could also explore additional contextual variables, such as the impact of digital media on voter knowledge. Such studies would offer deeper insights into the dynamics of opinion formation and voter behavior in direct democratic votes.

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**Data availability statement.** Replication data for this article can be found in Harvard Dataverse at: <https://doi.org/10.7910/DVN/LHPMSU>

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