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Polls, Coalition Signals, and Strategic Voting: An Experimental Investigation of Perceptions and Effects

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Abstract

The paper investigates how poll information and coalition signals affect strategic voting, defined as casting a vote for a party other than the most preferred party to better influence the election outcome. In particular if the outcome of an election is perceived to be close, voters in multi-party systems with proportional representation and coalition governments should have an incentive to cast a vote for the party that best influences the formation of the next government. The study focuses in particular on voters' attention to and perception of polls and coalition signals sent by parties before elections. The study used an innovative design that embedded a laboratory experiment in two real election campaigns, allowing the manipulation of poll results and coalition signals in a realistic environment. The findings suggest that political sophistication plays a crucial role for the accurate perception of polls and strategic voting. Coalition signals are found to have a surprisingly strong effect on (apparently) strategic voting.

Polls, Coalition Signals, and Strategic Voting:
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What can you do when your preferred party has no chance of winning in the upcoming election? One possibility is to just stay at home. However, voters who feel a citizens' duty to vote and who care about the outcome of the next election might rather decide that it is better to cast a vote for a less-preferred party, but one that will play a more decisive role in the formation of the new government (Cox 1997). In fact, voters in multiparty systems with proportional representation and coalition governments will often not only find themselves in such a situation but will also have options to do something about it. Instead of aiming at the mere satisfaction of casting an expressive vote for the most preferred party, strategic voters are guided by instrumental considerations, with desirable policy outcomes trumping preferences for individual parties. In short, paraphrasing a well-known former secretary of defense, strategic voters work with the parties they have, not the parties they want.

What are the conditions under which this can happen? So far, we do not know much about the conditions and processes that lead voters to vote strategically, except for two crucial conditions. First, strategic voting becomes only plausible if the outcome of the election is perceived as close, so that voters can at least believe that their vote (and that of like-minded voters) will be decisive (Acevedo and Krueger 2004). Second, strategic voting is a form of sophisticated decision making that requires detailed knowledge and information about the electoral chances of the parties as well as the possible coalitions after the election. While these assumptions are compelling, there is hardly any evidence at the individual level that shows whether and how strategic voters conform to these expectations. This, in short, is the main purpose of this study. We investigate the factors that affect voters' attention to and perception of crucial pre-electoral information, polls and coalition signals, and their influence on a particular type of voting behavior, strategic voting. The basic idea is that voters who realize—given the objective condition of a close election—that voting for their first choice of party or candidate will be a "wasted" vote might reconsider and vote for an alternative choice that will have an effect on the formation of a new government.

Strategic Voting

By definition, a strategic voter is not driven by the urge to express a deeply held party preference but motivated by the desire to influence the election outcome in general and government formation in particular. If voting for the preferred party does not promise to lead to a desirable outcome, for example because the initially chosen party might fail to pass a minimum vote share threshold to enter parliament, or because it cannot be expected to play any role during the formation of a coalition government, a strategic voter should rather vote for a party that he or she might prefer less but that is more decisive in producing a desirable outcome.

Strategic voting, or more precisely, behavior that looks like strategic voting, has been documented for a variety of election systems, from parliamentary democracies to presidential systems, using different electoral rules. Evidence has been found for countries such as Germany (Bawn 1999; Pappi & Thurner 2002), Great Britain (Alvarez & Nagler 2000, Franklin, Niemi, & Whitten 1994, Lanoue & Bowler 1992, Niemi, Whitten & Franklin 1992, 1993), The Netherlands (Irwin & Van Holsteyn 2002, 2003), Canada (Blais et al. 2001, Blais et al. 2005, Lanoue & Bowler 1998), New Zealand (Karp et al. 2002), and the USA (Abramson et al. 1992, 1995). While evidence for strategic voting can be found for most elections, the number of voters who actually engage in strategic voting is fairly low and typically ranges between 5 and 15 percent of the electorate. Strategic voting only makes sense, after all, if the appropriate conditions are given, primarily a close race and plausible alternative choices (e.g. Alvarez, Boehmke, & Nagler 2006).

Strategic voting behavior has been very well documented for electoral systems with single member districts and plurality elections, most notably Great Britain, and to a lesser degree for electoral systems with multiparty systems using proportional representation (Cox 1997). The latter type of system usually leads to coalition governments but also offers a number of circumstances warranting strategic considerations. First, proportional representation is usually not free from important restrictions, most notably a minimum threshold of votes that a party must reach to become eligible for seats in parliament. Failing such a threshold means that a vote for a

party is "wasted" or "lost" because it does not count toward the distribution of seats in parliament. Small parties that are close to the threshold—or fail to pass the threshold— should raise strategic considerations of the electoral chances among supporters. Strategic voters might also be found among supporters of major parties. If their preferred party has a junior coalition partner who is in danger of falling below the electoral threshold necessary for representation, they might be motivated to employ a coalition insurance strategy. Casting a strategic list vote for the junior coalition partner might ensure that it can pass the threshold and make the preferred coalition possible. If the junior partner fails to overcome that threshold, the senior partner alone might not play a leading role in the prospective government, or might be entirely out of contention.

Our expectation is deceptively simple: A close election and plausible alternative choices will increase the likelihood of strategic voting. The challenge is to find, or more precisely, to create circumstances under which voters face a close election for their preferred party (or parties), along with available options to vote strategically. The solution we propose below involves an experimental manipulation of poll information to create theoretically relevant scenarios, all in the context of actual election campaigns. First, the two crucial sources of information, polls and coalition signals, require some additional discussion.

Attention to Poll Information and Effects

Polls are a fact of life in political campaigns and widely reported in the media. The question whether polls have any consistent effect on voters, however, is far from settled. In fact, some expectations are contradictory. For example, the bandwagon effect holds that a party or candidate leading in the polls will attract further support, while the underdog effect claims the exact opposite. Without discussing the merits of these hypotheses (see Mutz [1998] for a detailed discussion), it should be noted that it will always be possible to find instances that support these notions, but that they fail to establish universal rules. More important, such simplistic responses to social cues are not of primary interest when it comes to strategic voting. The theory of strategic voting assumes that voters form rational expectations about the outcome of an election, or more precisely, how well the parties will perform in the upcoming election (Cox 1997).

Thus, the crucial question is whether (strategic) voters not only pay attention to poll information but also perceive such information accurately. The key criterion to assess voters' ability to form rational expectations is the quality or accuracy of their expectations about the outcome of the upcoming election. The most important source of pertinent information are pre-election polls widely disseminated in the media during political campaigns.

The availability of reliable polls, however, is not enough. When it comes to political expectations, evidence from public opinion research points to a highly prevalent projection effect. Expectations are strongly shaped or distorted by existing political preferences (Abramson et al. 1992, Babad 1995, Babad, Hills & O'Diskroll 1992, Bartels 1985, 1987, Blais & Turgeon 2004, Dolan & Holbrook 2001, Gimpel & Harvey 1997, Granberg & Brent 1983, Johnston et al. 1992, Lazarsfeld, Berelson, & Gaudet 1944, Lewis-Beck & Skalaban 1989, Mutz 1998). For example, Schoen (1999, 2000) shows for Germany that the expectation about whether or not small parties will pass the 5%-threshold to enter parliament is shaped by party identifications. Voters tend to overestimate the chances of preferred small parties while underestimating the chances of disliked small parties. The literature cited above suggests that expectations are a product of both, preference-driven projections as well as objective external sources of information such as polls. The opposite case—that expectations influence preferences—is possible as well but given only very low probability in the literature (Granberg & Brent 1983, Mutz 1998).

If we accept that polls are the primary source of (comparatively) objective information about the possible outcome of an upcoming election, the more pertinent question becomes who pays attention to polls and who uses such information to make better predictions of electoral outcomes. The most obvious answer is political sophisticates. Voters with a high level of political knowledge should be most aware of the latest polls and thus have the ability to make more accurate election forecasts. Awareness of political information is, after all, a defining characteristic of political sophistication (Zaller 1992). Dolan and Holbrook (2001), for example, found knowledge to improve the forecasting accuracy of voters. While mere "membership in the polity" (Lewis-Beck & Skalaban 1989; see also Irwin & Van Holsteyn 2002) should be enough

to enable reasonable predictions, access to current polls is required for accurate forecasts.

Even low sophisticates are not necessarily lost. Access and attention to poll information in the media should make it possible for virtually every voter interested in meaningful forecasts to do so, and work against the projection effect at the same time. Unless an individual chooses to disregard or misperceive objective information, factual information should constrain the projection effect. The evidence, however, is mixed. Babad (1995), for example, found that access to relevant information did not prevent wishful thinking from occurring, while Babad et al. (1992) found that information reduced wishful thinking to zero.

Access to information and knowledge are not the only factors that might lead to more accurate forecasts. Theories of motivated information processing see a link between the motivation to hold accurate attitudes and a more careful processing of information (Kunda 1990). An "intuitive scientist" wants to maximize accuracy while an "intuitive lawyer" wants to support existing conclusions (Baumeister & Newman 1994). A voter concerned about the outcome of the upcoming election and unsure about which party to vote for—a strategic voter would be a prominent exemplar—should have a strong accuracy motivation.

Because attention and comprehension of news requires motivation and ability to do so, we expect that political sophisticates are the key voter segment that is both interested in and able to use this information. In short, political sophisticates have the motivation and ability to (a) pay attention to poll information and to (b) accurately perceive such information. In contrast, partisan voters might also have the motivation to pay attention to poll information, but they have no incentive or need to curtail wishful thinking or to accurately perceive such information.

Coalition Signals

Polls are a critical source of information for strategic voters, but they are not the only useful source. As already pointed out, parliamentary systems using proportional representation are usually governed by coalitions of two or more parties. Individual parties mostly fail to obtain an absolute majority of seats to govern alone (Katz 1997).

Even if voters usually cast only a single vote for one party, they might very well be aware of possible coalitions after the election and might take these expectations into account (Blais et al. 2006). In fact, parties will often and explicitly send out signals to either rule out a coalition with another party or to announce a preference for a future coalition partner. Such cues or signals should help voters when deciding how to cast a vote. In particular strategic voters should value such information. If two parties have (credibly) ruled out a specific coalition, it will not make sense for a strategic voter to vote with the intention of giving such a coalition a majority.

In the case of Germany, the setting of our study, parties often use specific appeals or coalition signals to explicitly suggest to voters to use their party vote strategically (Schoen 2000).[1] These appeals will often be *negative* in the sense of ruling out a coalition with some other party, often in an attempt to project electoral "strength" by denying the need for a coalition partner. Negative appeals might be the default response but with limited credibility as a given electoral outcome will often only allow specific coalitions, no matter the denials before an election. The more interesting appeals are *positive*, signaling to voters a desirable coalition partner (while implicitly admitting that they need a partner to win). The typical example is an incumbent or proposed two-party coalition with a strong major party and a weak junior partner who is in danger of failing the electoral threshold. In such circumstances, German parties often resort to explicit appeals for strategic voting in the form of "Leihstimmen" (loan votes). Supporters of the safe major party are asked to cast, or "rent out," a vote for the small coalition partner to insure the minor party's entry into parliament, making the desired coalition possible.

If coalition signals turn out to be a driving force behind strategic voting, it would have interesting implications for the theory of strategic voting. By merely following such a signal, a strategic vote would not necessarily be the result of a sophisticated and

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[1] In national and most state elections, German voters cast two votes, the "first" vote for a candidate in a given electoral district, and the "second" but critical vote for a party list. The latter vote determines the actual distribution of seats in parliament. Casting two votes at the same time clearly offers the additional opportunity for strategic ticket splitting by voting for different parties (Gschwend 2004). In this study, however, we only look at the critical second vote that constitutes a hard test of strategic voting behavior.

informed decision process but rather a passive reaction to explicit appeals by the parties. As such, it would be more appropriate to classify such electoral decisions as insincere voting (assuming that only a vote for the most-preferred party is sincere). In short, our final expectation is that coalition signals increase the likelihood of strategic or insincere voting, independent of political sophistication.

Experimental Study Design

The goal of the study is to test the effects of polls and coalition signals on strategic voting. This raises a number of methodological issues. The vast majority of studies about strategic voting at the individual level are based on cross-sectional surveys, conducted before or after a single election. This creates the fundamental problem that it is more or less impossible to establish causality. This is a particularly serious problem when the relationship of preferences and expectations are unclear and possibly reciprocal. Second, looking at a single election usually does not provide much variation in the polls or coalition signals. Both are fairly stable and consistent before elections, and every voter will receive more or less the same information. As a consequence, it is nearly impossible to establish a causal link of exposure to polls and other signals with political behavior. Even if objective conditions favoring strategic voting exist, they might only affect a small part of the electorate (see Alvarez, Boehmke, & Nagler 2006). In short, it is very difficult to determine the effect of polls and coalition signals and the tendency to vote strategically with cross-sectional surveys

As alternative, laboratory experiments can overcome the problem of establishing causality by clearly separating cause and effect. They allow the careful construction of "objective" conditions such as a close election that should facilitate strategic voting. However, laboratory studies come with the downside of limited external validity. Experiments usually use fictitious scenarios that might make excellent tests of causal hypotheses but that fail to account for the complexity of real world elections.

Because the goal of our study is to test the *causal* effects of polls and coalition signals on strategic voting, we chose the experimental approach. However, instead of creating a fictitious election campaign, we embedded the experiment in two real election campaigns. The information used in the study was drawn from actual parties and their

platforms, and only the poll information and coalition signals were manipulated within a plausible range. A crucial advantage of such an approach is the possibility to tap into and use the actual party preferences of the participants, making a strategic voting decision more "costly" compared to purely fictional campaigns. At the same time, this approach allows the random assignment of participants to different poll-based scenarios to test whether different "objective" conditions of close elections have the expected effect on strategic voting.

Background Information about Campaigns

The study took place in January 2006, at the beginning of two simultaneous election campaigns in the two adjacent German states Baden-Württemberg and Rhineland-Palatinate. Both elections were held on March 26. Both states share a number of relevant characteristics. First, the five parties that could reasonably be expected to successfully enter parliament were identical and included two large parties—the conservative Christian Democrats (CDU) and the left-of-center Social Democrats (SPD)—as well as three smaller parties—the liberal Free Democrats (FDP), the environmental Green Party (Greens), and a new far-left party (WASG), mostly drawing on disaffected and/or former members of labor unions and the SPD. Second, both states were governed by fairly popular coalition governments (with one large and one small party) that could reasonably be expected to be re-elected. Third, both states use an electoral system with proportional representation in which voters have a single party list vote that determines who will be represented in the state legislature.[2] Parties have to pass a 5%-threshold to enter parliament. Fourth, the party platforms in both states were, for all practical purposes, identical except for state-specific differences and issues. None of the latter played any notable role during both campaigns.

Despite all these commonalities, there was (and is) a key difference between the two states: two different coalition governments. Baden-Württemberg was governed by a CDU-led coalition while Rhineland-Palatinate was governed by an SPD-led coalition. In

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[2] Voters in Rhineland-Palatinate also have the additional option to cast a plurality vote for a candidate in their district. This vote does not affect the distribution of seats in parliament (only the candidates who fill these seats). In our study, participants could only cast a single party list vote.

both cases, the FDP was the junior coalition partner. While a re-election of the two coalitions was the most likely outcome in both states, it was also quite plausible that the Greens could replace the FDP as the junior coalition partner, depending on the election outcome. In comparison, the electoral strength of the new WASG was much more uncertain, and the likelihood that it would join a coalition, even with the left-of-center SPD, extremely small.

Taken together, the two states offered the opportunity, just before the start of the actual election campaign, to create scenarios that would either facilitate or inhibit strategic voting, depending on different but plausible polls and coalition signals. Because there was no doubt that the incumbent large party would win again in each state, the plausible manipulations had to focus on the expected performance of the three small parties, including whether they would successfully pass the 5%-threshold to enter parliament and whether one of them would pull ahead of the other two small parties. In addition, it was possible to create comparable contexts or decision scenarios by "sending" study participants to the state that best matched their political preferences while (randomly) manipulating the factors of interest.

Method

Participants

A total of 280 students (105 female and 169 male; mean age 25 years, ranging from 18 to 50 years) participated in the computer-based experiment conduced at the beginning of—and embedded in—two German state election campaigns in January 2006. For the analyses, only the 200 participants who were eligible to vote in German elections were used.[3] The participants took about 50 minutes to complete the study and received €7 (about $10) for their participation. Participants were told that the purpose of

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[3] The data of 6 participants was lost due to technical problems with the experimental software or other computer problems. 69 participants who were not eligible to vote were excluded because their knowledge of German politics was significantly lower compared to native participants and, most critically, they did not have well-developed preferences for German parties, a necessary prerequisite to analyze strategic voting (defined as a vote deviating from an existing party preference). Finally, 5 participants were excluded because they had already participated in the pilot study.

the study was to investigate how voters inform themselves during an election campaign. More specifically, they were asked to take on the role of a voter and prepare to vote in the upcoming state election by choosing and reading information about the parties and the campaign (including the unobtrusively embedded polls and coalition signals).

Information Search: Process Tracing with a Dynamic Information Board

Study participants were exposed to a stream of quickly changing campaign information on a dynamic information board. The information covered party positions on various issues as well as poll results and coalition signals. Similar to Lau and Redlawsk (1997; Redlawsk 2001, 2002) and Meffert et al. (2006), the information board displayed information sequentially. Out of necessity, participants were forced to be selective in their choice of messages based on short headlines. Custom-developed software was used to both present and track the information selection behavior of the participants. Unlike earlier information board designs (i.e., Huang & Price 2001; Lau & Redlawsk 1997; Redlawsk 2001), our information board did not use labels such as "political experience" or "position on abortion" to categorize and pre-sort the headlines according to specific types of information. Instead, the information appeared as an apparently random stream of messages similar to newspaper headlines on a website (e.g., "CDU proposes a privileged partnership with Turkey").

Campaign Information

The campaign information consisted in total of 90 headlines and articles that were presented on 15 subsequent screens, with always six headlines visible on each screen (Figure 1). Each screen was called a "week" to simulate and highlight the passing of time until the election. 75 headlines and articles were party-specific and covered the five relevant parties running in the two elections (CDU, SPD, FDP, Greens, and WASG). For each party, the information covered two leading candidates as well as the official party positions on 13 different issues (including fairly generic topics such as statements about "innovation" and the "economy" and fairly specific and current topics such as the introduction of tuition at universities, the fight against bird flu, and prohibitions for state employees to wear a veil). The remaining 15 articles were split

evenly between five articles covering manipulated pre-election polls (see below), five articles about other (actual) "generic" polls without any direct electoral link such as the popularity of state politicians or the satisfaction with the personal financial situation, and five purely informational articles about each state's current issues or political history.

[Figure 1 about here]

Manipulation of Information: Polls and Coalition Signals

The poll results were manipulated to affect the expectation of how close the upcoming election would be. Such a manipulation was made possible by the fact that the study took place right before the actual campaigns got under way and the media started to report about polls. With the exception of election campaigns, media reports about state-level polls are very rare in Germany. At the same time, the manipulations had to be plausible and were thus constrained by the political reality in each state. In both states, the governing coalitions were expected to be re-elected and there was no doubt that one of the two large parties would win decisively while the other would finish a distant second without any chance of forming a government. As a consequence, the poll manipulation focused on the more uncertain outcome for the three small parties. As potential coalition partners of the respective large party, they would play a pivotal role in the formation of the new government.

Both poll and coalition signal manipulation had a systematic and a random component. At the beginning of the study, participants were asked for a ranking of the five parties by preference. This ranking was used for three *systematic* assignments that created standardized electoral scenarios with comparable conditions for the participants. First, and depending on the major party ranked highest, participants were assigned either to the state Baden-Württemberg (with a CDU-led government) or the state Rhineland-Palatinate (with an SPD-led government). As a consequence, the most-preferred major party for all participants was expected to win the upcoming election. Second, the highest ranked small party was used for the closeness manipulation of the polls and for the coalition signal manipulation. The small party was assumed to

represent the preferred coalition partner for the preferred large party.[4] Third, depending on which party was ranked highest, participants were categorized in either major-party or small-party supporters. The latter categorization determined how the poll manipulation would create a "close" election outcome based on the 5%-threshold.

Next, participants were *randomly* assigned to one of three poll conditions that suggested election outcomes of varying closeness. In the *control condition*, the preferred major party ("41%") and the preferred small party ("10%") were expected to comfortably win the election and constitute the only possible coalition (with the obvious exception of a great coalition between the two major parties, an outcome that was not considered likely). In the *close election condition*, the preferred small party was either just on the threshold required for entering parliament and thus in acute danger of failing ("5%", for major party supporters) or just below the threshold and thus expected to fail to enter parliament ("4%", for small party supporters). In each case, the polls create classic scenarios for strategic voting. Major party supporters might decide to depart their safe and dominant major party and vote for the preferred small coalition partner to ensure the party's entry into parliament. Small party supporters should instead realize that their vote would be "wasted" on a party that has no chance to enter parliament and that it could be better used for a party with a realistic chance to become part of the next government. In the *competition condition*, the three small parties were running head-to-head, with about "7%" each. This scenario provides an incentive for strategic voting for major party supporters (to give the preferred small party an edge over the competitors) but should work against strategic voting for small party supporters who should rather be motivated to support the preferred party. Participants were assigned to the three conditions with 20, 50, and 30 percent probability (with the assumption, based on a pilot study, that participants would be split about evenly between major party and small party supporters). For the analyses reported here, the different conditions are combined in two categories, depending on whether or not the poll created a "close" election outcome for a given participant.

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[4] Participants were explicitly asked about their coalition preferences later in the study. The responses more or less confirmed this expectation.

The coalition signal manipulation was operationalized in a fairly straightforward manner. The poll articles either made no reference at all to possible coalitions or used the preferred major party and the preferred small party to indicate that such a coalition was supported by prominent politicians in each party.[5] The signals were embedded in typical headlines and slogans used during elections, for example stating that politicians of the (preferred) major party were "hoping for a coalition with [the preferred small party]" or that politicians of the small party are "appealing for 'Leihstimmen' (loan votes) of [the preferred major party] supporters." The two signal conditions were assigned randomly with even probability and independent of the poll condition.

The five articles that reported in more detail about the manipulated polls were phrased identically in each poll condition. Only the names of the parties were automatically substituted depending on the party preferences of each participant.

Participants encountered the manipulated information in two ways. Early during the information search (after two screens with headlines), all participants were asked to participate in a pre-election poll. After answering the poll, they were shown a results page (Figure 2) that presented a table with the manipulated poll results on the left and a short verbal (headline-style) summary of the results on the right, highlighting the "closeness" of the poll for those who fail to draw these conclusions from a numerical table on their own. On the bottom, two brief statements attributed to the two preferred parties of each participant, again in newspaper headline format, were used for the coalition signal manipulation. All participants encountered and read this page before continuing with the information board task.

[Figure 2 about here]

The second opportunity to encounter poll results was as part of the information displayed on the information board. The five articles covering the manipulated polls (out of 90 total) presented the same poll results and coalition signals but highlighted different aspects, using a different framing. Unlike the poll results page described above,

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[5] The coalition signals were carefully phrased to be plausible whether or not this coalition represented the governing coalition in a given state or whether it would involve a new coalition after the election.

participants had to deliberately select these five articles for reading. Consequently, they offer a hard test of attention to pre-election polls.

Procedures and Measures

Participants started by indicating their position on or agreement with 14 political issues (see Figure 3 for a plan of the study). Next, they were asked to rank the five parties CDU, SPD, FDP, Greens, and WASG by preference. These responses were used for the systematic assignment to the poll and signal conditions as described above. Participants read a brief introduction to the state election campaign of the assigned state, followed by an introduction and a trial run of the information board. After completing the trial run, the main task of the study started. The 90 headlines were presented on the information board, always six headlines on each screen that remained visible for a fixed interval of 45 seconds (Figure 1). The six headlines on each screen always covered the six information categories defined by the five parties (either issue positions or candidate information) and a sixth category with polls or other state-related information.

[Figure 3 about here]

Participants were instructed that they could choose any article for reading by clicking on the headline. The associated article with a length of approximately 120 words opened in a window partially covering the headline page of the information board (Figure 4). The article page remained open until it was closed again by the participant.

[Figure 4 about here]

Participants were allowed to read as many articles as they wanted, but even while they were reading an article, the headlines on the front page continued to change at the fixed interval of 45 seconds. During the campaign, all participants were exposed to the same 90 headlines, but the order of headlines both across the 15 weeks and within each screen was randomized. After the first two screens, the search was interrupted and paused for the pre-election poll that asked participants to indicate their party preference at that time (with an additional "don't know" option), followed by the "results" page which summarized the manipulated polls and coalition signals (Figure 2).

After the information search ended, participants were asked to vote for their final party choice, followed by an open-ended listing of reasons for their vote as well as a rating of a series of reasons frequently given by voters. The latter reasons included one statement typical for strategic voters (see Fisher 2004)—"My preferred party has no chance"—as well as one about habitual voting, a behavior that should work against strategic voting—"I always vote for this party." Participants indicated the degree to which these reasons applied to their vote decision on a 5-point rating scale. Participants were also asked to make a forecast of the election outcome, including precise party vote shares and the lower and upper bounds for each party vote share prediction (a 90%-confidence interval). Given the difficulty of this task, the software assisted making this forecast by making sure that the party predictions added up to 100 percent, and that the predicted lower and upper limits for each party vote share prediction were below or above these forecasts. Participants had to provide complete data before continuing. To determine the accuracy of the forecasts, the manipulated "objective" poll results were subtracted from each participant's party vote share predictions and averaged to calculate the mean absolute error (MAE) of the predictions. In other words, the MAE measures the extent to which the predictions deviate from the polls. The order of the two tasks, vote decision (with listing and rating of reasons) and forecast, was randomized, but because no order effect was found in the analyses reported below, it is not further addressed in this paper.

The study continued with detailed questions about party and coalition preferences and other political orientations of the participants. Standard measures relevant for the subsequent analysis are political interest and the strength of party identification. Participants listed their demographics (e.g. sex) and were asked about their attitudes towards polls. More specifically, they were asked about their attention to polls before elections (5-point scale), the perceived accuracy of polls (4-point scale), whether they usually consider polls when making a vote decision (5-point scale), and, as a control question, about the time of their last encounter with (real) state-specific polls (six response options).[6]

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[6] In Germany, publicly available polls at the state level are not very frequent and usually do not receive prominent attention in the media unless shortly before the election. The

At the end, participants responded to an open-ended political knowledge scale that included 14 factual questions about the offices or positions of various national and international politicians (or vice versa) as well as questions about the political system (Mean = 6.59, SD = 3.10).

Results

The analyses start with a manipulation check by summarizing descriptively the use and perceptions of the manipulated polls. Next, the factors affecting the use and perceptions of polls and coalition signals is assessed more formally, followed by an analysis of the effects of poll and signal information on the voting behavior of participants.

Manipulation Check: Use and Perception of Manipulated Polls

Participants selected and read on average 29 articles including about two articles (out of five) covering manipulated polls and coalition signals (Figure 5). Together with the poll results page seen by all participants, participants did have a fairly high chance of encountering the same poll information repeatedly. The interest in poll-related articles was even higher if the articles with generic (not manipulated) poll information are added as well. On average, participants read 1.7 generic poll articles (out of five) covering the popularity of state politicians, surveys about satisfaction with the personal financial situation, and similar topics. At the same time, however, the articles covering polls were not the primary interest of the participants. With an average of slightly more than seven articles, they paid by far the most attention to information about their most preferred party. In fact, the attention to articles about the different parties tracks perfectly with the party ranking given by the participants at the beginning of the study.

[Figure 5 about here]

last poll reported in the media preceding this study happened one and half months before the study. On the last day of the study, however, the media reported the results of a new poll in one of the states. Of about 40 study participants who could have encountered information about this poll, only nine reported being aware of it, with no further evidence that is affected their forecasts.

The next and more important question is whether participants not only viewed the manipulated polls but used this information to calibrate their predictions. To assess this impact, we looked at the critical component of the poll manipulation, the forecasts for the most preferred small party. As Figure 6 shows, the poll manipulation was successful, at least in relative terms. The average predicted vote share for the most preferred small party declines significantly with lower poll values, from a high of 9.8% in the control condition to a low of 6.4% in the "failure" condition ($F = 9.85$, $p < .001$). The same applies to the predicted lower limit of the party vote share, ranging from 6.6% to 4.1% ($F = 18.59$, $p < .001$). The evidence for the predicted upper limit of the vote shares follows a similar pattern from 12.8% to 6.6% ($F = 10.64$, $p < .001$). Even though the polls significantly affected the forecasts, the latter are not entirely "accurate." With the exception of the control condition with a fairly high "10%"-poll, the forecasts exhibit considerable projection effects. On average, participants added between 1.7 and 2.9 percentage points to the polls, expecting the preferred small party to perform more successfully than predicted by the "official" polls. Even in the "failure" condition, the party is expected to safely pass the 5%-threshold. For this reason, the predicted lower limit of the 90%-confidence interval around the vote share forecasts becomes critical. This prediction does reflect the intent of the poll manipulation very clearly. In the two safe conditions ("10%" and "7%"), the predicted lower limit is on average well above 5%-threshold. In the two conditions with a close outcome ("5%" and "4%"), the lower limit matches the polls with 4.8 and 4.1 percent more or less perfectly. In short, participants had the tendency to overestimate the chances of the preferred small party but clearly perceived the risk of failure as suggested by the polls. Overall, the poll manipulation can be considered as successful.

[Figure 6 about here]

Attention to Poll Articles and the Perception of Polls and Coalition Signals

After the initial descriptive assessment, we turn to a more systematic assessment of the participants' behavior and perceptions. We begin by testing the hypothesis that political sophisticates not only pay more attention to poll information but are also able to make more accurate forecasts of the election outcome. Participants driven by partisan

preferences, on the other hand, should neither have particular interest in polls nor a motivation to make accurate forecasts. First, we look at the hard behavioral measure of attention to poll information, the number of poll articles read by a participant. Participants could choose to read between 0 and 5 articles with manipulated poll information. To test our hypothesis, we regressed this attention measure on two self-reported indicators of political motivation, political interest and strength of party identification, and the objective measure of factual political knowledge. In addition, three attitudes or opinions about polls that might affect attention to polls are included as well: attention to pre-election polls in general, the perception of accuracy of polls, and the extent to which a participant usually considers polls when making a vote decision. Because preliminary analyses showed that the sex of the participant had a surprising and unexpected effect on this and some subsequent models, sex is included in the model as well.

The results show that the two political motivations did not affect the selection of poll articles, even though strength of party identification comes very close to standard levels of significance (Table 1). Instead, political knowledge emerges as a highly significant predictor of attention, supporting the notion that political knowledge—representing better developed cognitive capacities for political information—increases interest in more complex, horse-race-related political information. This finding is further supported by the fact that self-reported attention to (or interest in) polls in general does not affect the actual selection of such information. Only agreement with the goal-directed attitude of using polls for the vote decision has a significant and positive impact. In addition, male respondents were significantly more likely to select poll articles. In short, attention to polls appears to be goal-driven and more common among political sophisticates.

[Table 1 about here]

Moving from the quantity of exposure to the quality of perceptions of poll information, we regressed the mean absolute error (MAE) of the party vote share predictions, the average deviation from the reported (and manipulated) poll results, on several predictors. These include again the two political motivations political interest and strength of party identification as well as political knowledge. A new and important

predictor of accurate perceptions is the number of articles with poll information read by a participant. Because political knowledge already affects the selection of articles, it is possible that the impact of reading articles differs for different levels of knowledge. On the one hand, political sophisticates should be better able to understand and use poll information. On the other hand, political sophisticates should already be able to quickly understand the implications after seeing only a single poll article. Reading additional articles covering the same poll results therefore may not improve the accuracy of predictions to any substantial degree. It is more reasonable to expect that those low in political sophistication would benefit more from repeatedly reading the same information. In short, while both political knowledge and the reading of additional poll articles can be expected to lower prediction errors, the interaction of both variables should show a declining error-reduction effect of reading more articles as political knowledge increases.

To control for the possibility that exposure to real polls before participating in the study had influenced the participants, a dichotomous indicator is included for those who reported encountering state-specific polls recently.[7]

While the error reduction model has only modest explanatory success (Adj. R^2 = .13, Table 2), it demonstrates again the important role of political sophistication, along with a conditional effect of reading additional poll articles. Both political knowledge and poll articles significantly reduced the errors in the forecasts but show a significant interaction effect as well. According to the latter, the error reducing effect of reading poll articles diminishes with increasing sophistication, and, in fact, disappears for high sophisticates (Figure 7). In other words, the fact that high sophisticates read more poll articles does not appear to provide any additional benefit for improving forecasts. Those low in political knowledge can improve the accuracy of their predictions rather dramatically by reading more articles and even close the gap with high sophisticates. Thus, high sophisticates are again the winner of the contest, but the lead is not unassailable. It should also be noted that there are no sex differences in the forecast error model, and that previous and recent exposure to polls in the media did not have any effect on the accuracy of the predictions.

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[7] It is rather unlikely that exposure to published polls would have undermined our manipulation because the real polls were fairly close to our manipulated polls.

[Table 2 about here]

[Figure 7 about here]

The second manipulation involved the presence or absence of a coalition signal involving the preferred major party and the preferred small party of each participant. Participants were asked at the end of the study whether they had noticed such a coalition signal (between the expected winner—the preferred large party—and each of the three small parties). We used the dichotomous indicator of noticing a coalition signal for the two preferred parties as our dependent variable and regressed it on the randomly assigned coalition signal condition (yes or no) as well as the same predictor variables used above, political interest, strength of party identification, number of poll articles, and political knowledge.

The results differ from the poll models in one crucial respect: political knowledge does not affect the perception of the coalition signal (Table 3). The presence of a coalition signal had the most substantial impact, increasing the likelihood of perceiving the correct signal by 31 percentage points. Reading additional poll articles also contributed to such a perception, by up to 19 percentage points. Finally, the strength of party identification had a significant impact, increasing the likelihood of perceiving the signal by up to 19 percentage points. These results suggest that political knowledge is not important for picking up such signals, maybe because political sophisticates are already aware of the possible coalitions and/or discount any explicit signals send out by the parties during campaigns. Much more sensitive to such signals appear to be those who identify more strongly with one (or any) of the parties.

[Table 3 about here]

The picture that emerges from this first part of the analysis is fairly straightforward. Political sophistication increases interest in articles with poll information and also leads to more accurate forecasts of the election outcome. However, reading additional articles did not improve the forecasting ability of high sophisticates beyond the single exposure to the pre-election poll on the results screen. Low sophisticates were much more error-prone in their predictions, but they seem to have the opportunity to overcome this disadvantage. If they made the effort to read more articles with poll information, they were able to completely compensate the knowledge advantage of high

sophisticates. However, the fact that low sophisticates read fewer poll articles suggests that not many use this opportunity to catch up. Closing this knowledge gap is possible in theory but rarely accomplished in practice. Partisan signals, on the other hand, are more likely to be picked up by the highly partisan, independent of political sophistication. Partisan voters might be inclined to pay more attention to statements by party representatives and the potential alliances they propose. So far, the results conform to the assumptions of the theory of strategic voting.

Effect of Close Polls and Coalition Signals on Strategic Voting

The final and critical question is whether close polls and coalition signals have an impact on the likelihood of voting for a party other than the most preferred party. For theoretical as well as substantive reasons, we look at both a soft and a hard indicator of strategic voting. First, we look at any occurrence of what is better called *insincere voting*, that is, any vote for a different party than the one preferred most or ranked highest. Second, we use a hard indicator of true *strategic voting*. To be classified as such a voter, participants had to (1) vote for a different party than the one ranked highest or any other party that was evaluatively tied (rated the same) with this party, and they (2) had to volunteer at least one strategic reason for their vote decision in the open-ended listing task after the final vote. Any reference to polls or the chances of any party in the upcoming election was considered to be a strategic reason. These two operationalizations of strategic voting immediately translate into vastly different frequencies. While there are 48 insincere voters in our sample (24%), the number drops to only 10 truly strategic voters (5%). The different nature of these two groups comes in even sharper focus when we look at the circumstances under which they cast their deviating vote. For insincere voters, it did not matter whether the manipulated polls created a condition to vote strategically. They were equally likely to cast an insincere vote whether or not the polls suggested a close election. Truly strategic voters, on the other hand, voted this way only when the polls suggested a close election. In this case, the number of strategic voters reached 7.4 percent, a number in line with previous survey-based studies. Without the incentive of a close election, not a single strategic voter can be found.

Poll Condition	Insincere Voters*	Strategic Voters	N
Save Poll (Control)	16 (24.6%)	0 (0%)	65
Close Poll	32 (23.7%)	10 (7.4%)	135

* Including strategic voters.

To better assess the factors that brings people to vote either way, we regressed the dichotomous indicator for insincere voting on indicators of a close (pro-strategic voting) poll, the presence of a coalition signal as well as strength of party identification, political knowledge, sex of participant, and the participant's agreement with possible reasons for (or against) strategic voting: always or habitually voting for the same party versus voting for a different party because the preferred party does not have a chance. The model for strategic voting follows the same structure, with one important difference. Because there is not a single strategic voter in the control condition (making the poll condition variable a constant), only respondents in the close poll condition can be included. As a consequence, the poll condition variable cannot be included in the model.

Starting with insincere voting, the poll condition did not have any effect, a finding foreshadowed by the table above. The coalition signal, however, had a significant positive impact and increased the likelihood of insincere voting by up to 20 percentage points. Political sophisticates were more likely to do so as well (49%), as were female respondents (18%). While the strength of party identification surprisingly failed to have the expected negative impact, agreement with two potential reasons for strategic voting showed very powerful effects in the expected directions. Habitual voters of the same party were far less likely to vote insincerely (-62%) while those who perceived their preferred party as not having a chance were much more likely to vote insincerely (67%). These results suggest that participants did not react to the actual closeness of the polls, but that they still behaved as expected and departed their party when they *perceived* a situation of a potentially wasted vote (at least in their mind). Unlike the negative result for polls, the coalition signal had the expected positive impact, apparently tempting voters to follow the party signals even if not warranted by the polls.

[Table 4 about here]

Turning to the hard indicator of strategic voting, the number of significant predictors in the model is reduced to two. Just the agreement with the two potential reasons for and against strategic voting showed the expected effects. Habitual voters were up to 26 percentage points less likely to deviate from their preferred party while the perception of no electoral chances for the preferred party boosted the likelihood of departing the preferred party by up to 21 percentage points. All other variables, including strength of party identification and political knowledge, failed to affect true strategic voting. It must be pointed out, however, that these strategic voters were exclusively found in the close poll conditions, suggesting indirectly that this behavior was conditional on the objective conditions created by the poll manipulation.

Conclusion and Discussion

The goal of this paper was to test the theoretical assumptions about strategic voters by investigating the attention and perception of pre-election polls and coalition signals and their causal influence on strategic voting. We used an innovative study design that embedded a laboratory experiment in a real election campaign to offer participants credible and realistic election scenarios while keeping the ability to manipulate the factors of interest. Needless to say, the study shares some of the shortcomings of laboratory experiments such as a nonrepresentative student sample. For this reason, we will extend our analysis by replicating the analysis with survey-based data (representative state-level pre-election polls) as it becomes available. The experimental design allowed us to create theoretically relevant scenarios, customized to participants' actual party preferences. It further gave us the opportunity to measure participants' information selection behavior and prediction abilities in unusual detail. This made it possible to put some basic assumptions about strategic voting to a real test, something not possible with previous survey-based data.

Substantively, we found that voters do pay attention to poll information, but that this attention depends in particular on the political knowledge of voters and the very specific, goal-directed motivation of using poll information to make a voting decision. If

we consider poll information to be more complex political information, the nature of the readership in our study shows a striking match with this assumption.

Exposure and attention do not necessarily tell us much about the impact of such information. By looking at the (accurate) perception of polls and coalition signals embedded in a steady and overwhelming stream of political information, two strikingly different findings emerge. First, voters seem to acknowledge polls by adjusting their forecasts accordingly (despite engaging in some modest wishful thinking in terms of the preferred small party). Political sophisticates appear to quickly adjust their expectations of the electoral outcomes to the polls, while less knowledgeable voters have the opportunity to do as well if they make the effort to select and read more information about the polls. The findings of the poll perception model are consistent with the assumption of the strategic voting literature. Political sophisticates appear to have the necessary awareness of the electoral chances of the parties.

The second finding is more surprising. The successful detection of coalition signals is not dependent on political sophistication at all but rather driven by partisan motivations. Those who identify more closely with parties appear to be more sensitive to these signals. If we consider coalition signals as a valuable piece of information for strategic voters, the evidence suggest that the signals reach the wrong audience. Partisan voters who should be least likely to depart their party to vote strategically are most receptive to these signals, while political sophisticates who are better informed and who should be more likely to vote strategically seem to miss these signals. The latter conclusion might be premature, in particular because we find that political knowledge increases the likelihood of insincere voting.

Our findings about insincere and strategic voting raise crucial questions about previous assumptions about strategic voting. First, we show that there is a dramatic gap between apparently strategic voters and real strategic voters. Insincere voting might have many different reasons, but according to our study, (objective) polls indicating a close election outcome is not one of them. Two factors seem to entice many voters to depart the preferred party. First, coalition signals by the parties seem to have such an influence, even if the polls do not justify such behavior. In fact, the evidence suggests that the campaign strategy of using coalition signals seem to be highly effective for the

parties. Second, voters who *believe* that their preferred party has no chance in the upcoming election tend to depart the party, independent of what the polls show. Both coalition signals and idiosyncratic beliefs about electoral chances do not correspond to the assumptions of the classic strategic voter model. Two possible explanations for insincere voting should be mentioned. First, insincere voters might be policy-oriented and vote according to the issue positions taken by the parties. Second, insincere voters might be *strategic coalition voters* who want to produce a specific coalition no matter how close the polls are. Subsequent analyses will investigate these motivations in more detail.

The strategic voter model fares better with our measure of true strategic voting. We find such behavior exclusively if polls suggest a close election, but it is a rather small number of voters who fall into this category. Taken together, the high number of insincere voters and the low number of strategic voters suggest that researchers have to be very careful about how to classify and interpret voting behavior that departs from the preferred party. The common practice of survey-based studies to consider all insincere voters as strategic voters appears premature and misleading. And even if voters "rent out" their vote after an appeal by the parties, they are not strategic voters in the classic and "sophisticated" sense. They are rather "followers" of the coalition signals send out be the political parties.

The analysis reported here is a first step to test the assumptions of the strategic voter model at the micro-level. By comparing and contrasting our experimental findings with equivalent survey data, we plan to extend these initial findings with more in-depth analyses of the available data. For example, the surprisingly strong performance of coalition signals suggests not only that the theory of strategic voting needs some revisions if it wants to offer a realistic explanation of political behavior at the micro-level but also that insincere voting is a promising area for campaign effects research.

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Table 1: Attention to Poll Articles

	Number of Poll Articles	
	B	SE
Strength of PID	.19	(.10)
Knowledge	.09*	(.04)
Political Interest	.13	(.17)
Sex (Male)	.60**	(.22)
Attention to Polls	.17	(.14)
Accuracy of Polls	-.15	(.18)
Use of Polls	.23*	(.10)
Constant	-.19	(.49)
F	8.17**	
Adj. R^2	.20	
N	200	

Note: Entries are unstandardized regression coefficients, with standard errors in parentheses.
* $p < .05$; ** $p < .01$

Table 2: Errors in Poll Perception

	Mean Absolute Error (MAE) of Predictions	
	B	SE
Poll Articles (N)	-.19**	(.19)
Knowledge	-.32**	(.07)
Poll Articles X Knowledge	.07**	(.02)
Strength of PID	.01	(.11)
Political Interest	.38	(.21)
Sex (Male)	-.19	(.27)
Polls Seen	-.17	(.33)
Constant	4.01	(.49)
F	5.16**	
Adj. R^2	.13	
N	200	

Note: Entries are unstandardized regression coefficients, with standard errors in parentheses.
* $p < .05$; ** $p < .01$

Table 3: Perception of Coalition Signal

	Coalition Signal	
	B	SE
Coalition Signal	1.66**	(.36)
Poll Articles (N)	.29*	(.13)
Knowledge	-.01	(.07)
Strength of PID	.42*	(.19)
Political Interest	.23	(.30)
Constant	-3.71	(.69)
χ^2		40.38
N		200

Note: Entries are unstandardized logistic regression
coefficients, with standard errors in parentheses.
* p < .05; ** p < .01

Table 4: Effect of Close Polls and Coalition Signals on Insincere and Strategic Voting

	Insincere Voting		Strategic Voting[a]	
	B	SE	B	SE
Close Poll	.06	(.45)	---	
Coalition Signal	.92*	(.42)	.17	(.81)
Party No Chance	.82**	(.22)	.65*	(.28)
Habitual Voter	-.98**	(.21)	-1.44*	(.51)
Strength of PID	.06	(.21)	.71	(.44)
Knowledge	.20**	(.08)	.05	(.05)
Sex (Male)	-1.57**	(.48)	-.56	(.93)
Constant	-1.19	(.76)	-2.99	(1.45)
χ^2	67.19		25.30	
N	200		135	

Note: Entries are unstandardized logistic regression coefficients, with standard errors
in parentheses.
[a] "Close Poll" condition only.
* p < .05; ** p < .01

Figure 1: Headlines on Information Board

Landesanzeiger Rheinland-Pfalz

Letzte Meldungen vom Wahlkampf   Wochen bis zur Wahl: 14

FDP setzt sich für Adoptionsrecht für gleichgeschlechtliche Paare ein

Grüne wollen Chancen von gering Qualifizierten verbessern

Werdegang von Alexander Ulrich, Spitzenkandidat der Linkspartei

Umfrage: Zufriedenheit mit persönlicher finanzieller Lage überwiegt

Hartz IV-Reformen von SPD-Politikern verteidigt

CDU bekennt sich zur Sozialen Marktwirtschaft

Figure 2: Poll Results Page after Pre-Election Poll

Landesanzeiger Rheinland-Pfalz

● **Ergebnisse der Wahlumfrage**

Partei	Stimmenanteil
SPD	45 %
CDU	33 %
Die Grünen	7 %
FDP	5 %
Die Linke	6 %
Sonstige	4 %

Die Fehlertoleranz bei 1250 Befragten liegt zwischen +/- 1,4 und +/- 2,7 Prozentpunkten.

Die letzte Umfrage von Infratest-dimap für Rheinland-Pfalz zeigt die SPD deutlich vor der CDU. Der Einzug der FDP in den Landtag ist gefährdet.

Stellungnahmen der Parteien:
SPD: Umfrage ist Kursbestätigung; Hoffen auf Koalition mit FDP.
FDP: Harter Wahlkampf steht bevor; Werbung um "Leihstimmen" von SPD-Anhängern.

Zurück zum Wahlkampf

Figure 3: Plan of Study

Issue Positions

↓

Party Preferences (*Ranking* of Parties)

↓

Basic Information about Parties and Election Information Board Training

↓

Election Campaign: Information Board Task "Pre-Election Poll"

↓

Order Manipulation

↓ ↓

Vote in Election	Forecast of Election Outcome (Party Vote Shares & Confidence Intervals)

↓ ↓

Reasons for Vote Decision (Open-Ended & Rating)	Vote in Election

↓ ↓

Forecast of Election Outcome (Party Vote Shares & Confidence Intervals)	Reasons for Vote Decision (Open-Ended & Rating)

↓ ↓

Party Preferences (*Rating* of Parties)

↓

Coalition Preferences Expected Coalitions

↓

Political Attitudes Demographic Information General Attitudes about Polls Political Knowledge Scale Manipulation Checks

Figure 4: Article Page on Information Board

Politiker der Linkspartei kritisieren Hartz IV-Gesetze

Laut Politikern der Linkspartei herrscht bei der Umsetzung der Hartz IV-Gesetze Chaos. Betroffene seien immer wieder mit fehlerhaften Bescheiden und gestressten Sachbearbeitern konfrontiert. Deshalb fordert Die Linke eine Änderung der Hartz IV-Gesetzgebung.

Dazu gehören unter anderem die Anhebung des Arbeitslosengelds II in Ost und West, höhere Freibeträge für Ersparnisse, eine deutliche Verbesserung der Zuverdienstmöglichkeiten und die Streichung der Anrechnung des Kindergeldes bei Arbeitslosengeld-II-Empfängern.

Ein zentrales Element für die Weiterentwicklung sozialer Sicherungssysteme ist für die Linkspartei die schrittweise Einführung einer am Bedarf orientierten sozialen Grundsicherung. Ihr Ausbau zu einem Bürgerrecht stellt einen Rückhalt für individuelle Freiheit dar. Um dieser Grundsicherung den Weg zu ebnen, unterstützt Die Linke die Forderung nach Einführung von Mindestlöhnen. Dringend geboten sind außerdem Regelungen, die Kinderarmut verhindern.

Schließen
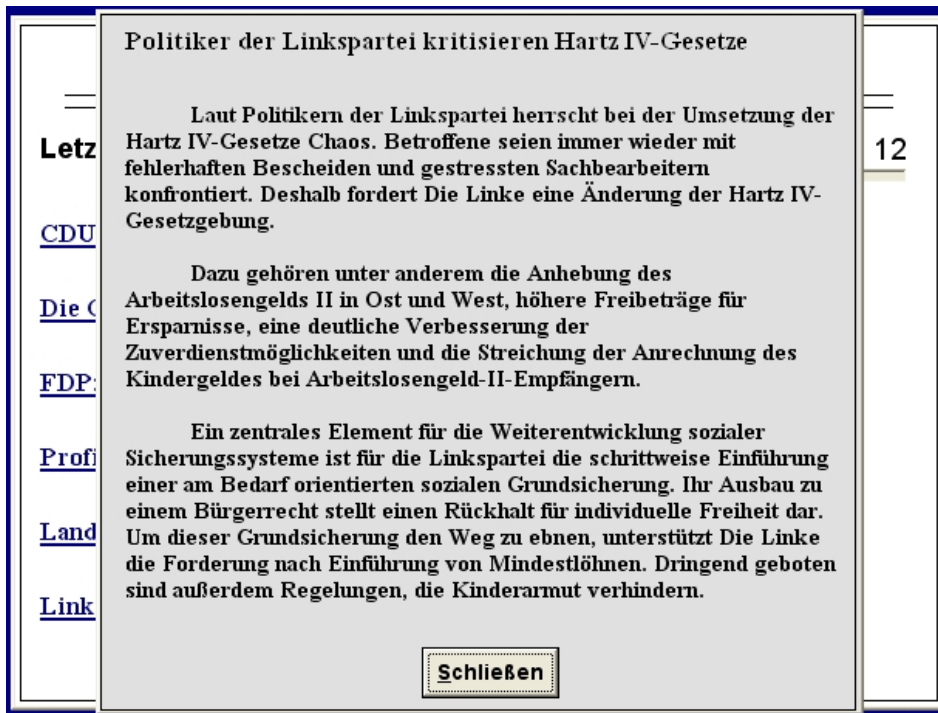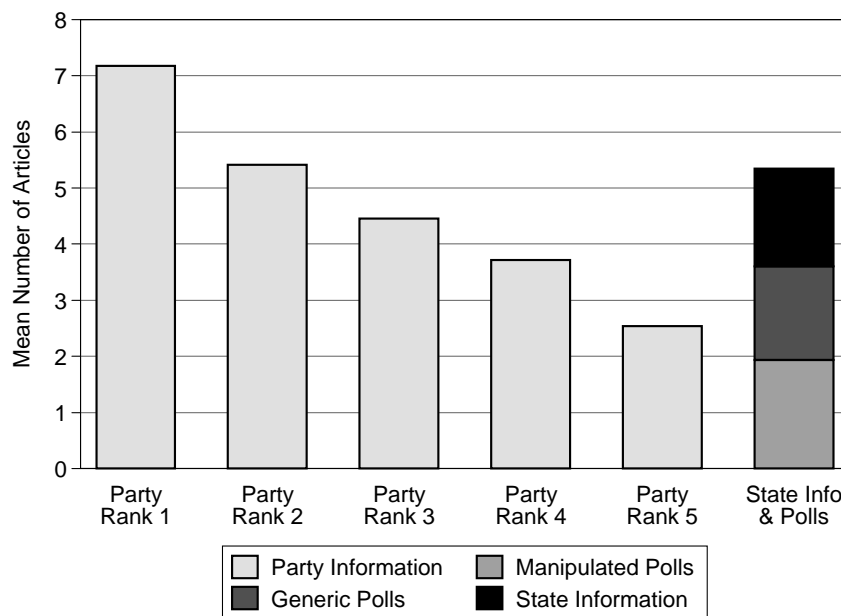
Figure 5: Selection of Articles by Category

Note: Bars represent the average number of articles selected for reading in six different headline categories. Each category was represented with one randomly chosen headline on each of the 15 screens. The party categories are based on the party rankings given by each participant.

Figure 6: Forecasts of Vote Shares and Confidence Intervals for Preferred Small Party
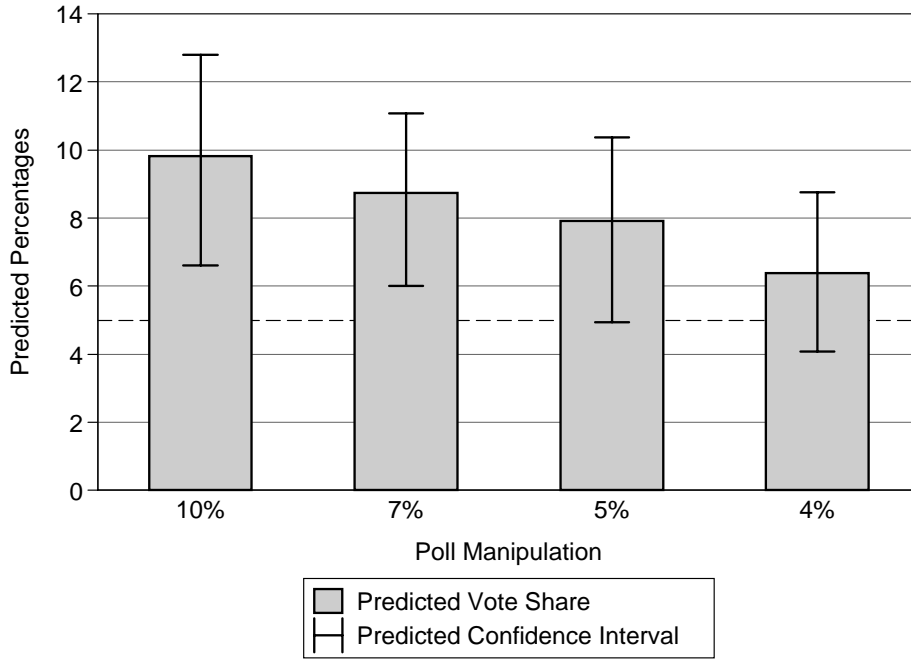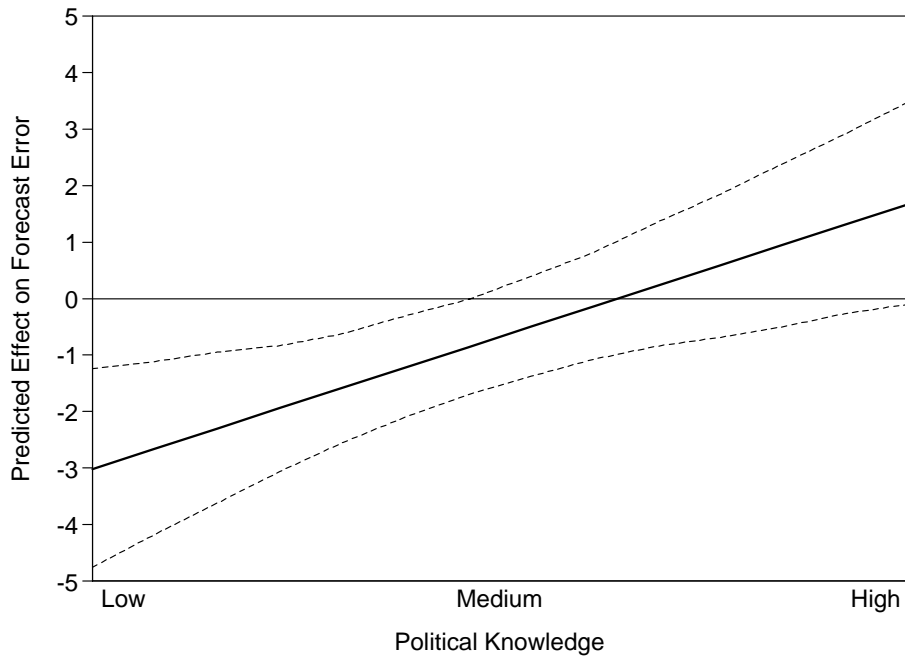

Figure 7: The Effect of Reading Poll Articles on Forecast Errors, Conditional on Political Knowledge

Note: The line shows the predicted effect of reading five (versus none) articles with manipulated polls on the prediction errors (MAE) at different levels of political knowledge

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