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How are Voters Influenced by Opinion Polls? The Effect of Polls on Voting Behavior and Party Sympathy

DOI 10.1515/wps-2016-0012

Abstract: Similar to all other types of information, public opinion polls can influence public opinion. We present two hypotheses to understand how polls affect public opinion: the bandwagon and the underdog effect. The bandwagon effect claims that voters "jump on the bandwagon," which means that if a party is gaining in the polls, the party will gain additional support from the voters, and vice versa if the party is losing in the polls. The underdog effect suggests that if a party is losing in the polls, the party will gain some sympathy votes to offset this loss. We use a survey experiment to test the two hypotheses. We find evidence of the bandwagon effect, and the effect is strongest in the positive direction. When voters learn that a party is gaining in the polls, voters will be more likely to vote for it. There is also some evidence for the negative bandwagon effect. We find no evidence for the underdog effect. The effects head in the same direction regardless of the size of the party. We conclude by discussing the implications of our findings with regards to a potential ban on publishing opinion polls.

Keywords: opinion polls; party sympathy; polls; voter influence; voting behavior.

1 Introduction

Polls are a substantial part of the media's coverage of politics in Denmark, especially during election campaigns, where we have seen an increased number of articles based on polls. During the national parliament election campaign in 1998, 177 news articles in newspapers were based on poll results, whereas this number increased to 358 in the 2011 election campaign (Hansen 2014; Pedersen

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2014). Thus, it is almost impossible for a voter to avoid exposure to polls during an election campaign, and as such, it is practically impossible for voters to avoid getting an indication about how their fellow citizens intend to cast their vote on election day. In this article, we examine whether such polls affect the voters. In particular, we examine whether polls affect voters' sympathy for the political parties, and even more important, whether polls can affect voters' propensity to vote for particular parties compared to a situation where voters had not been exposed to a given poll.

The excessive use of polls makes answering this research question urgent because a frequently raised argument in the debate about regulation of publishing election polls is that such polls might affect voters and the election results. However, for several reasons, it is unclear whether voters are affected by polls. First, there has been no scientific, empirical examination in a Danish multiparty context of the extent to which polls affect Danish voters. Second, existing international research points in different directions. In some studies, polls seem to affect voters one way. In other studies, polls seem to affect voters in another way. Therefore, the goal of this article is to examine the isolated effect of what presenting a poll to *Danish* voters has on their voting behavior and their sympathy for the different parties.

Our interest is therefore primarily empirical and relatively context specific. We focus primarily on how exposure to a poll affects Danish voters' support for the political parties. Therefore, we want to examine the effect of polls within the context that voters are typically exposed to them, which is after the poll has undergone a journalistic process and interpretation. We are not interested in how the sole information relayed by the results of a poll affect Danish voters, but rather how polls in conjunction with the journalistic mediation affect the Danes. Specifically, we utilize a survey-experiment with 3011 respondents who are exposed to different fictitious polls presented in different fictitious news stories.

The article is structured as follows: First, we briefly relate the existing research and hypotheses concerning the effect of polls. Though the effects of polls have been examined in other countries and with different methodologies, we do not find the conclusions conclusive enough to be able to generalize to a Danish context. Hence, we present a survey experiment designed to determine to what degree polls have an independent effect on voters in Denmark. Next, we analyze the effect of presenting the polls on the voters' sympathy for the parties, their voting intention and their reported likelihood of voting for the different parties. Our main finding is that when a party advances in the polls, it has a positive effect on the support and sympathy for the party. Finally, we discuss the implications of our findings for the discussion concerning additional regulation of publishing opinion polls.

2 Existing Literature: Between Bandwagon and Underdog Effects

Since the first scientific polls, there has been an ongoing debate about the potential effect of polls on voters (Gallup and Rae 1940; Simon 1954). We address two general hypotheses concerning how polls influence voters in the literature. These hypotheses describe two different potential effects of polls, which are frequently discussed under the heading of bandwagon and underdog effects (Aalberg and Van Aelst 2014; Donsbach 2001).[1]

The bandwagon effect is quite similar to the well-known lemming effect. It implies that when a person identifies with a social group and observes that it is moving in a certain direction, she will want to move in the same direction. In terms of polls, the bandwagon effect implies that voters will be inclined to follow the movement in the polls, if there is any clear pattern of movement. Specifically, these voters will be more likely to support a party if it is clearly gaining in the polls and will be less likely to support a party if it is clearly losing in the polls.

Similar effects have been found in the fields of, e.g. economics, social psychology, political psychology and marketing (Leibenstein 1950). Several theoretical mechanisms can explain the bandwagon effect. First, belonging to a group may be associated with a sense of happiness, confidence and satisfaction for the voter (Mondak 2010; Brady and Mcnulty 2011; Gerber et al. 2011; Erikson and Stoker 2011). Second, voters may take cues from the information in the polls on which way the party's popularity is moving. Each voter could reason, consciously or not, "if this many people are voting for the party, I will not be completely off doing the same thing" (Lau and Redlawsk 2001; Hardmeier 2008). In the same vein, the voter can utilize information concerning a party's decline to "abandon the sinking ship" together with the rest of the voters leaving the party. In this way, the party loses even more votes after a published poll shows a decline in support for the party. This explanation finds use in fields outside of political behavior

1 Besides the bandwagon and the underdog effect, there are several other hypotheses that would fall under "strategic voting behavior" (Donsbach 2001; Irwin and Van Holsteyn 2008; Moy and Rinke 2012). These theories are about voters' use of polls to avoid the fear of wasting their vote on a party that will not make it to parliament. It has some resemblance to the idea of "abandoning the sinking ship" from the bandwagon effect, but the motive is different. One may expect to see a greater use of strategic voting in voting systems that deviate from a proportional representational system, e.g. Great Britain (Alvarez et al. 2006), because more votes are (potentially) wasted in this system. Hence, we will primarily focus on the bandwagon and underdog effects in the following and let others look at possible effects that polls may have on strategic voting behavior in the Danish context.

(Pettit et al. 2013), but there is no reason not to utilize it in the field of voting behavior.

Bandwagon effects have been identified in a number of experimental studies of polls. For instance, Ansolabehere and Iyengar (1994) demonstrate increasing sympathy towards leading candidates in an experimentally manipulated poll, but this sympathy does not affect party choice. Other researchers have found even more mixed findings (e.g. Ceci and Kain 1982). In a meta study, Hardmeier (2008) collects 45 previous examinations of the bandwagon effect on polls; 42 of these studies have statistically significant effects caused by the bandwagon effects across party and election systems, although it is worth mentioning that the average effect size is relatively modest. At the same time, these studies are fundamentally different, examining topics such as party sympathy, choice of party or choice of candidate. Last, it is crucial to mention that the 45 studies are conducted in different political systems and contexts, which is why one may question whether it is meaningful to make inferences based on any average calculated across these very different studies.

The second hypothesis described in the literature is the underdog effect. The argument is that parties that are set to decline in a poll will receive "sympathy votes" from the electorate. The exact mechanism behind this effect is a little unclear. One explanation might be that the voter feels sorry for the party and thinks the party deserves better. Another explanation can be that voters have a certain underlying sympathy towards the party (e.g. the voter could be a former party identifier). Seeing that the party is doing badly in polls, the voters may think that they must step in and help. Furthermore, the underdog effect may be seen in relation to some type of reaction out of spite. The voters may think that the party did not deserve to perform so badly, which is why the voters will react by voting for the party, even though the voters did not plan to do so (Michniewicz and Vandello 2013; Moy and Rinke 2012; Aalberg and Van Aelst 2014). The underdog effect might be specifically strong if the decline in polls will result in the party falling below the threshold of representation. This argument is widely used by political elites. For instance, during the Norwegian Parliament Election *(Stortingsvalget)* in 2013, the Socialist Left Party urged the voters to cast a sympathy vote for them[2], and in the Danish election for the European Parliament, certain Social Democratic candidates urged right wing voters to vote for the Conservative party to secure their representation in the conservative group in the European parliament[3].

2 Ditlevsen 2009.

3 Bolvinkel (2014) Uventet melding fra S: Stem på Bendt Bendtsen. TV2, 05.05.2014.

If we look at empirical studies of the underdog effect, Restrepo et al. (2009) finds such an effect and no bandwagon effect. In the aforementioned meta study by Hardmeier (2008), she finds that 14 out of 17 studies confirm the underdog effect. The average effect size, however, is only 1/3 of the bandwagon effect, and as was the case for the bandwagon effect, this average is calculated across very diverse type of studies.

Overall, there seems to be more empirical support for a bandwagon effect rather than an underdog effect. Polls seem to increase support for the party that stands strong in the poll. However, there are two problems with drawing such clear conclusions based on the existing literature.

First, it is very hard to separate a negative bandwagon effect from a positive underdog effect because the hypotheses give conflicting predictions in negative polls. If voters, for instance, observe that the Social Democratic party has lost two percentage points in a poll and this leads one percent of the voters who were otherwise thinking about voting for the Social Democrats to decide not to vote for the party, does this mean that there is no underdog effect? We cannot say that for sure because in the absence of an underdog effect, the Social Democratic party could have lost three percent of their voters rather than one percent. As such, even if we find one mechanism, we cannot know for a fact that the other mechanism does not exist. We can just note that, on average, one effect dominates the other. We face the same challenge in our study, and we will therefore only be able to say something about which effect is dominant, not which effect is present. Empirically, saying something about the dominant effect is still very relevant because it tells us something about how the average voter will be affected if we present the average voter with a poll.[4]

The second problem is especially relevant in relation to the present study's purpose, which is to examine the effect of opinion polls in a Danish context. There seems to be great variation in the relative strength of the bandwagon and the underdog effect. In some cases, the underdog effect seems to dominate, in more cases, the bandwagon effect seems to dominate, and in some cases, neither seems to dominate. This observation makes it hard to know what to expect in a Danish context, where there have not been any empirical studies of the relative strength of the underdog and bandwagon effects. In fact, it seems to be impossible to make a qualified guess based on the existing literature.

4 An alternative to an empirical study would be to look at the relative strength of the bandwagon and underdog effects in countries where we would expect to find comparable effects, that is, countries where the media system, the political system and the voters are similar to that of Denmark. Even though this might give us some idea about the effect of polls in Denmark, we believe that it is considerably more useful to do a study in the Danish context. In addition, we have no knowledge of any studies in other Nordic countries, which could be used for such a comparison.

3 Research Design

The respondents in our experiment represent a diverse sample that is very close to a viable demographic representation of the Danish voters between the ages of 18 and 74. The survey experiment was conducted as an online survey with Yougov's internet panel. The survey experiment was conducted from the 10th of January through 28th of January, 2014. A total of 6941 invitations to participate in the experiment were sent out via e-mail to Danish citizens between 18 and 74 years old, and 3011 respondents completed the entire survey. Therefore, 43.4% responded to the survey, which is a satisfactory response rate for this type of study. The analyses only include answers from those who completed the entire questionnaire[5].

The respondents were randomly split into five groups. Four of the groups read a fictive article from a newspaper including a poll (these groups are called the treatment groups). The last group did not read an article (this group is the control group). After this, all of the respondents answered a few identical questions, including what party they would vote for if the elections was tomorrow. By comparing the answers between the control group and the four treatment groups, we can examine the effect of reading a short article including a poll, as opposed to not reading anything.

In connection to this, it is important to know that we cannot isolate the effect of the poll or the article. These elements are presented together, and accordingly, we cannot talk about a clear poll effect. As described in the introduction, we have chosen to present the poll in connection with a short article describing the poll because this is how the poll typically is presented in real life. It is rare that you only see a poll published without any description, which frames the poll. However, this situation does lead to the limitation that we cannot directly asses whether it is the positive or negative result of a poll or the journalistic framing that affects voters. Figure 1 illustrates the experimental design.

Figure 1 shows that the control group did not receive any treatment. For group 2, the Social Democrats advanced 5 percentage points in the article, whereas they declined 5 percentage points in group 3's article. For group 4, the Conservatives advanced 2 percentage points, whereas they declined 2 percentage points, leaving them below the threshold of 2 percent. We chose different magnitudes of poll movements for the two parties to make sure that the movements did not seem too extreme but kept the magnitudes of poll movements large enough so that the

5 We also performed the analysis including those respondents who only completed part of the questionnaire (n = 744). This does not substantially change the effect sizes or statistical significance. There were no differences in drop-out rates across the different experimental groups.

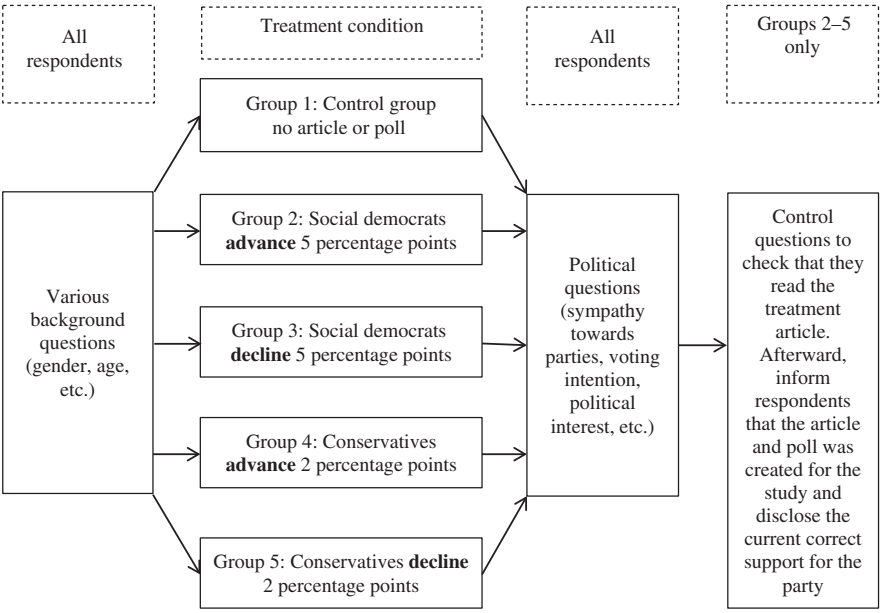


Figure 1: Research Design.

changes seem notable given the parties' size. Small parties typically move around less in the polls because their electoral starting point is lower, which helps confirm the realism in the movements. The articles were set up as real newspaper stories, and four political journalists from different newspapers read and commented on the articles and confirmed that the articles could have been published. Figure 2 shows the loss article for the Conservatives.

The hypotheses behind the choice of the four treatment articles are grounded in bandwagon and underdog effects. Furthermore, we tested the effect on a small party (the Conservatives) and a large party (Social Democrats) to be able to draw broader conclusions.

To be able to generalize the findings of the article, it was crucial that the articles were as credible as possible. Hence, the heading of the articles were taken from or resembled real news stories. Furthermore, the support to the parties presented in the fictive polls moved around the actual support at the time of the study.[6] Furthermore, the changes in support for the parties were credible in the sense that swings of this size could be found in running polls.

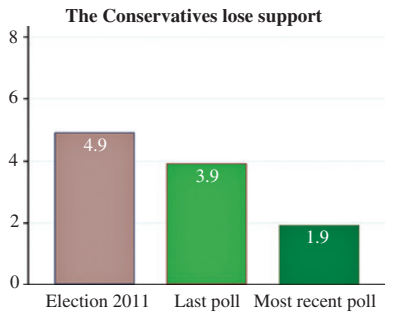
6 Concretely, the support for the parties in the experiment was set at the same level as an average-of-polls conducted by Professor Søren Risbjerg Thomsen and published by Altinget.dk.

New poll knocks the Conservatives out of Parliament

The Conservatives face a 2 percentage point loss in a new disastrous poll. »Impossible to see a way out of the crisis,« election researcher says.

By Mette Andersen

A new poll sends the Conservatives down for the count. Many Conservatives had hoped that the new year would bring positive vibes and an increase in voter support, but their dreams have not come through. Thus, a new poll delivers a massive setback for Lars Barfoed's troops, who thereby continue their slump into free fall.



The survey was conducted by the newspaper's permanent research institute among 1,058 representatively selected Danes. The statistical uncertainty is 0.8 percentage points.

According to the new poll, The Conservatives would receive 1.9% of the votes if the election were to be held tomorrow. A month ago, the Conservatives were to get 3.9% of the votes. The party got 4.9% of the votes in the 2011 election. According to Kasper Møller Hansen, professor and election researcher at the University of Copenhagen, the new poll should greatly worry the party.

» The poll suggests that the mass migration away from the Conservatives continues, and it weakens the party in all aspects. Whatever the party does, they cannot seem to get momentum in the polls « says Kasper Møller Hansen and continues: »On top of the bad polls, the party is in a situation where the tools that they have tried to apply have failed to increase the electoral support. It is almost impossible to see a way out of the crisis for the Conservatives,« Kasper Møller Hansen ends.

Figure 2: Loss Article for the Conservative Party (translated).

After having read the articles, the respondents were asked different questions, including who they would vote for if the following day was election day, their sympathy towards all of the parties in the Danish parliament, and how likely it was that they would vote for each party in parliament. To make sure that the respondents read the article, the respondent could not advance in the questionnaire within the first 30 seconds. Moreover, the last question of the questionnaire tested whether the respondents had read a minimum of the article because the respondents had to repeat some information from the article. It was not possible for the respondents to go back in the questionnaire and change their answers or read the article again. Out of the 2407 respondents who saw one of the articles (control group not included because they were not given an article), 89% were correct, 11% were wrong or replied "do not know" on the question about the

article with which they were presented. As such, the majority had read the article intensively enough to be able to repeat the heading, and we therefore know that the respondents were exposed to a signal about large gains or losses for the Social Democratic party or the Conservative party. After having answered this question, the respondents were informed that the polls and the articles had been designed by the authors.[7]

4 Analysis

The analysis consists of simple comparisons between the experimental groups because we assigned the subjects independently of all of the underlying variables; the only systematic difference between the groups concerned the article that they received. To check whether this was actually the case, we performed a randomization check, which showed that there was no sign of imbalance in relation to gender ($\chi^2(4) = 5$, $p = 0.28$), age ($\chi^2(12) = 8.8$, $p = 0.72$), education ($\chi^2(32) = 26.4$, $p = 0.75$) and what the respondent voted at the last election ($\chi^2(52) = 45$, $p = 0.73$). Hence, the survey experiment should give us an unbiased estimate of the effect of being exposed to the different articles.

To examine whether polls influence the voters, we compare the respondents' answers to three questions concerning the popularity of the party. Hence, we look into whether the articles influence the respondents' answers to: (1) what they would vote if a Parliamentary election were held the next day, (2) the probability of voting for the party, and (3) sympathy towards the party. The reason for choosing these three questions is that previous scientific work has shown that support towards a party is the hardest to affect through polls because choice of party builds on ideological and attitudinal factors, which seem hard to change with a single poll (Stubager et al. 2013). There is a behavioral dimension in choice of party as well because voters, by voting for one party at a previous election, have confirmed their choice. At the same time, one may think that party sympathy is easier to affect because the sympathy is grounded in feelings towards the party and not so much ideology. Finally, we expect that the polls' effect on the question

7 The text on the last screen was as follows (authors' translation): "Thanks a lot for participating! The study is a part of a research project at the Department of Political Science, University of Copenhagen. For the sake of good order we want to inform you that the article we showed you have not been printed in any newspaper – instead it was developed for this research project for the purpose of learning about how polls and news stories affect how the Danes answer opinion polls. The Social Democratic party has 22.3 pct. of the votes in an average of recent polls, whereas the Conservatives have 4.5 pct. All the best, YouGov."

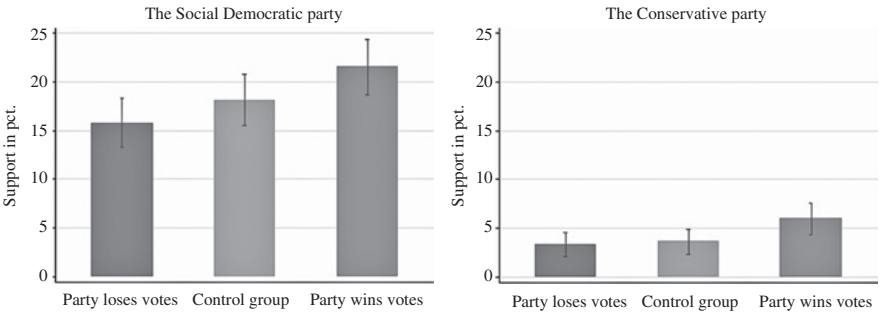


Figure 3: Effect of Opinion Polls on Voting Intentions.
Bars show average for the group, vertical lines show 95 pct. confidence intervals. Respondents were asked "If a parliamentary election was held tomorrow, which party would you vote for?" All of the parties represented in parliament were represented as options, as well as options indicating that respondents wanted to vote for some other party, did not want to vote or did not know whom to vote for.

regarding the probability of voting for the party is somewhere in between the two other questions.

We compare the answers to these questions across three groups: those who saw an article including a poll that described an advancing party, those who saw an article that described a declining party and the control group. The dependent variable is support of either Social Democrats or the Conservatives, and the independent variables are two dummy variables (gaining or control) (losing or control). As such, we do not look at what the effect of the Social Democrats decline means to the Conservatives' popularity or the other way around. There are approximately 600 respondents in each group, and approximately 30 respondents in each group did not want to answer the questions that we are interested in, which yields a total of approximately 1700 respondents in each comparison.

Figure 3 shows support toward the Social Democratic party in the left panel when respondents had read the Social Democratic gain article, no article or loss article. On the right side, we show support for the Conservatives when respondents had read an article where the Conservative party gained or lost and the respondents in the control group. Every column shows the support in percent, and the line indicates the 95% confidence intervals.

In the control group, the support for the Social Democrats is 18.1%, whereas the support is 2.4 percentage points lower, i.e. 15.7%, in the group that read the loss article. The group which read the gain article had a 3.4 percentage point higher support than the control group, which corresponds to a support of 21.5%.

These differences imply a bandwagon effect because the voters presented with the gain article were more likely to vote for the Social Democrats than the voters who were not presented with any article and voters presented with the loss article. The difference between the gain article and the loss article is statistically significant ($p = 0.007$, one sided[8]). However, neither the difference between the gain article and the control group ($p = 0.14$, one sided) nor the difference between the control group and the loss article is statistically significant ($p = 0.075$, one sided). Even so, the directions of both are consistent with the bandwagon effect. These results suggest that the bandwagon effect was larger than the underdog effect among those who were presented with a poll about the Social Democratic party.

When looking at the Conservative party, the difference between the control group and the gain article points in the same direction as when looking at the Social Democratic party (cf. Figure 3). As was the case with the Social Democratic party, the difference between the gain and loss article is statistically significant ($p = 0.016$, one sided). As such, we find a statistically significant bandwagon effect for both smaller and larger parties. For the Conservatives, the difference between the control group and the gain article is statistically significant ($p = 0.033$, one sided), but the difference between the loss article and the control group is not statistically significant ($p = 0.376$). As for the Social Democrats, the conclusion seems to be that the underdog effect is dominated by the bandwagon effect. Voters vote with the polls, not against them.

Not all of the differences examined above were statistically significant. Only one of the four polls, the gain article for the Conservative party, yielded results in which the recipients were significantly different from the control group at a five percent level of significance. Therefore, we must be careful not to make any sweeping inferences based on the individual comparisons. However, we find it reassuring that there were differences between the gain and loss articles and that the results across the four treatments point in the same direction: the results reject the hypothesis that the underdog effect is dominant and instead suggest that the bandwagon effect dominates. Additional analyses show that the effects were stronger and clearer for those respondents (89 pct. of those in the treatment groups) who were able to recall the headline from the presented article at the end of the survey. To examine the robustness of the results, the next section examines how the articles affected voters on two related dependent variables.

8 We use one-sided tests in the entire article, since we have directional hypotheses.

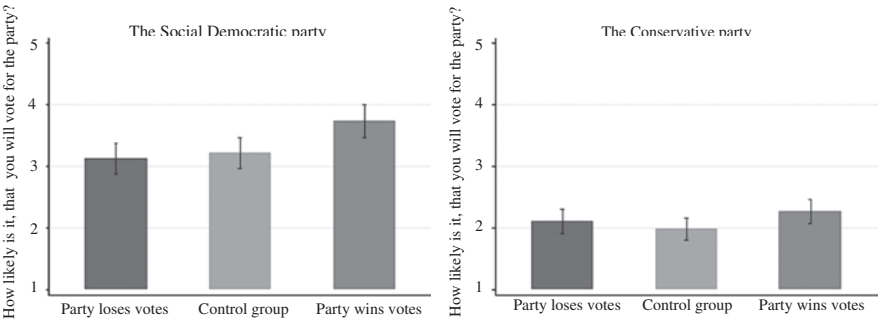


Figure 4: Effect of Polls on Likelihood of Wanting to Vote for the Party.
Bars shows average for the group, vertical lines show 95 pct. confidence intervals. Respondents were asked for each of the two parties: "How likely is it that you would vote for this party?" For each party, they answered on an eleven-point scale ranging from "Not at all likely" to "Very likely." Respondents could also answer "Don't know the party" and "Don't know." The scale is recoded to range between 0 and 1.

4.1 The Effect on Party Sympathy and the Probability of Voting for the Party

As mentioned earlier, we tested the effect of the articles on two other questions. Figure 4 shows the effect on the probability of voting for the party, whereas the effect on party sympathy is shown in Figure 5.

The probability of voting for the Social Democrats and sympathy towards the Social Democrats is consistent with choice of party in Figure 3. The gain article increases the probability of voting for the party and the sympathy towards the party. The probability with the gain article increases with 0.05 on a 0–1 scale – 0 means "not probable" and 1 means "very probable." This effect is significant ($p = 0.010$, one-sided). The sympathy is increased by 0.03 on a scale with 0 being "very little" and 1 being "a lot." The difference is significant ($p = 0.040$, one-sided). The loss article reduces the probability of voting for the party by 0.01 ($p = 0.33$ one-sided) and sympathy by 0.02 ($p = 0.12$ one-sided). Both effects are insignificant but point in the same direction as the effect on party choice. There is no sign of sympathy supporting a party that is in decline, which once again shows that the underdog effect cannot be identified and that, if it exists, it is dominated by the bandwagon effect. As such, there are signs of the bandwagon effect for these two dependent variables as well.

When considering the Conservative party, the gain article seems to deliver similar results. The probability of voting for the party is increased by 0.03 on a 0–1 scale (Figure 4) and is significant as well ($p = 0.04$ one-sided). The sympathy

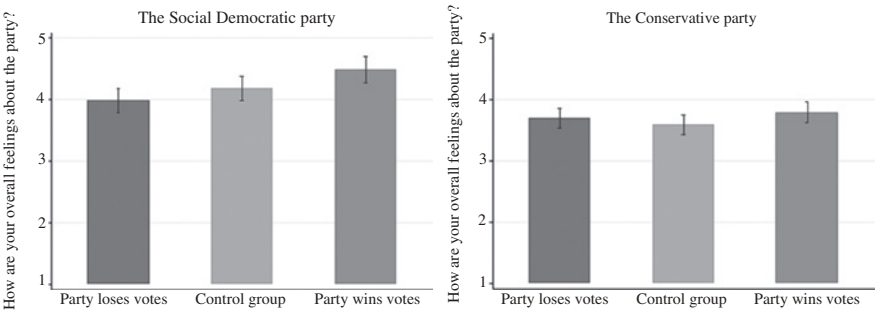


Figure 5: Effect of Polls on Sympathy Towards the Party.
Bars shows average for the group, vertical lines show 95 pct. confidence intervals. Respondents were asked for each of the two parties: "How much do you like or dislike this party?" For each party, they answered on an eleven-point scale ranging from "Dislike it a lot" to "Like it a lot." Respondents could also answer "Don't know." The scale is recoded to range between 0 and 1.

is increased by 0.02, which is significant at a 10 pct. level ($p = 0.078$ one-sided) (Figure 5), which also supports the bandwagon hypothesis.

However, the effect of the loss article shows a different picture than the one we observed when it came to intended voting behavior. Both the probability of voting for the Conservative party and the sympathy towards the Conservative party is higher for the group that received the loss article than for the control group. The effect is far from statistically significant, but we cannot rule out an underdog effect in which the voters will support the party in decline. This tendency towards a positive underdog effect is only present for the Conservative party and only when we measure party sympathy and the question on probability of voting for the Conservative party, not for intended voting behavior. The differences are modest and insignificant in both cases ($p = 0.21$ sympathy and $p = 0.22$ probability of voting, one-sided). The differences between the loss and gain articles are also insignificant for both variables.

In conclusion, there is statistically significant support towards the bandwagon hypothesis in three out of eight analyses, whereas two of the analyses show a tendency in that direction. If the underdog effect is present, it is usually dominated by the bandwagon effect. This result corresponds with previous analyses of intended voting behavior, which increases our confidence in relation to the effect the presentation of polls has on voters. Finally, it is worth mentioning that there are no significant differences in which the type of voters are affected by the polls. There is, for instance, no difference in how highly educated and less educated people are affected (see Dahlgaard et al. 2014).

5 Discussion

To learn about how Danish voters react to polls, we conducted a survey experiment in which the voters either read an article including a decline poll or an advance poll or did not read an article at all (control group). Overall, we find that all three dependent variables are affected in the same direction by reading an article and a poll. The voter's choice of party, the probability of voting for a party and sympathy towards a party are all consistently affected by the articles.

Both the Social Democratic party and the Conservative party gain a significant positive effect on all of the variables when the respondents read an advance article. Furthermore, we find that the voters have a tendency to leave a party which is losing in the polls. Although some of the effect sizes are small and in some cases insignificant, the full picture remains: If the underdog effect exists, it is weaker than the negative bandwagon effect. We find a consistent bandwagon effect. The voters go with the winning team no matter the size of the party and abandon the sinking ship when the party is declining.

A central consideration relates to the ecological validity of our study; that is, to what extent can the results from the undeniably artificial survey situation be translated to the more natural situation where an article has to fight for the voters' attention in completion with many other media offerings? If one starts with the bold assumption that the ecological validity is high and the effects can be transferred directly to a Parliament election, then the implications are considerable: For a group of voters who received a news story about how the Social Democratic party advances five percentage points in the poll, the support for the party is 5.7 percentage points higher than among a group of voters who received a news story about how the party is losing a similar number of votes. For the Conservative party, the difference is 2.7 percentage points. If one assumes that these effects generalize to a real parliament election, then that is a difference of ten seats in parliament for the Social Democratic party and five for the Conservative party if all of the voters have seen the pool. These effects are large, but there are a number of conditions that makes it unlikely that the effect sizes will be the same and directly transferable from the article to the real world.

First, one should remember that these results are created in a situation where respondents have received an article and shortly after indicate who they would vote for. One cannot conclude that the effects would be similar in a real poll. For this to be the case, the voters should see the poll beforehand, which is unrealistic. Second, one should remember that a survey experiment is a created and artificial situation with no disturbing elements. In real life, one would observe much more competition for the voters' attention than in this experiment. In a campaign, there

would be many different polls, and they would be presented and commented on differently by political journalists and pundits. As mentioned in the introduction, the numbers of articles during election campaigns based on polls have increased substantially (Hansen 2014: p. 125). These two conditions weaken the ecological validity substantially.

It is not possible to say exactly how large a fraction of the effect can be found in the real world. This is a central limitation for survey experiments in general and therefore not just a challenge for our study. Survey experiments deliver a strong internal validity but are challenged in regard to ecological validity. To maintain strong internal validity and increase the ecological validity, one should complete a field experiment in conjunction with an election. However, this would probably not be seen as ethically defensible because there is a real risk of affecting the election outcome by intentionally manipulating the information presented in the election coverage. A survey experiment with as realistic a treatment as possible is therefore, probably, the best and most realistic research design to investigate the effect of opinion polls.

As described above, the participants in the experiment are representative of the Danish voters on a number of variables such as gender, age (five categories), region (five regions) and party choice in the last election. The sampling is conducted using quota sampling in a YouGov online panel. These conditions do not imply that the sample is necessarily non-representative for other variables, which brings up the question of external validity; i.e. to what extent can we be sure that the estimated effects are generalizable to persons who did not participate in the online survey? We cannot be sure, but even so, it is impossible to determine whether our participants are more or less receptive to the treatments presented here. We have no theoretical expectation that one or the other should be the case or whether those who did not participate are exactly as receptive as those who did participate. Therefore, we must simply regard lack of participation as a source of insecurity without being able to indicate the direction of this insecurity.

As mentioned in the introduction, there is an ongoing debate about a possible regulation of publishing polls and exit polls. Although we examined polls in the analysis, there is no reason to expect that the effect of exit polls would be substantially different. If actors intend to use the article's conclusions in the debate concerning the publishing of polls and exit polls, we find it necessary to highlight some relevant considerations. First, it is crucial to remember that polls are not the only elements of an election campaign. Our experiment shows that polls may have an actual effect, but the artificial situation implies that the effect is likely to be smaller than what we found above. If there is an effect of polls, an empirically well-founded argument for regulating them can be that polls do affect the outcome of the elections. As such, if one strongly believes that voters should

not base their decisions on this type of information, some sort of ban might be necessary.

Conversely, one quickly reaches a gray area. Obviously, other kinds of journalism in the same category affect voters as well. For instance, a German study argues that citizens are more affected by vox pops than polls (Daschmann 2000). If this is the case, should one regulate the use of vox pops before elections as well? What about political analysis concerning the current strength of the parties? It is difficult to see where to draw the line.

Another argument for publishing polls is that polls strengthen the political journalism by offering an extra input to the pluralistic media reality in which parties, politicians, commentators, interest organizations and common people speak their minds. Moreover, it is worth remembering that a high quality poll is a scientific tool that captures the mood of the public much better than a vox pop or a political pundit. Hence, the problem is to a larger extent that the quality of the polls and the way that they are presented do not live up to the scientific standard, which infuses polls with some degree of legitimacy. This problem could be improved by using weighted averages across polls and present more information about the quality of the poll (sampling, weighting, data basis, etc.) and the statistical insecurity.

There are also practical challenges in regulating polls to consider. Today, journalism is digital and transnational. By banning the publishing of polls in Denmark, one cannot be certain that these polls will not be published on a Swedish or Norwegian website. This problem is well-known in France, where polls are strictly regulated. In this case, exit polls concerning the French elections are published in the Belgian or Swiss press.

Finally, a pro-publishing argument is that publishing polls secures more equal access to information for big and small parties and interest organizations, as well as for the voters, which may be seen as a democratic advantage. Without public opinion polls, the big parties and interest organizations will still be able to afford private polls, giving them privileged access to this valuable benchmark for how the election campaign is going, whereas smaller parties and the voters are likely to be the losers because they have fewer resources. In a broader perspective, going beyond election polls, the big interest organizations will be able to conduct polls on single issues important to them, which they then can use to punish politicians for policy proposals. Though these examples are different, the democratic problem remains the same: There may be a higher degree of inequality in the access to information among the broader public, who will not obtain this information, while big parties and interest organizations will continue to have access to information.

Acknowledgments: The data for this project was funded by the Danish Broadcasting Corporation (DR). Research design, questionnaire, analysis and conclusions are exclusively the responsibility of the authors. We thank Rasmus Tue Pedersen, Asmus Leth Olsen, Toril Aalberg, Rune Slothuus and the two anonymous reviewers for constructive comments on an earlier version. Data was previously used in the working paper Dahlgaard et al. (2014), where additional analyses can be found. Any remaining errors and omissions are the responsibility of the authors.

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Supplemental Material: The online version of this article (DOI: 10.1515/wps-2016-0012) offers supplementary material, available to authorized users.