Forecasting the outcome of a national election: the influence of expertise, information, and political preferences

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The Influence of Expertise, Information, and Political Preferences**

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Abstract

Five days in advance of the 2005 German national election, political experts, voters, and novices were asked to predict the outcome of the election. In an experimental manipulation, half of the non-expert sample was provided with additional poll information in the form of a figure with trend lines. The results show that (1) experts were marginally more accurate than non-experts but highly overconfident in their predictions, that (2) access to pre-election poll information improved the forecasting ability of novices, and that (3) partisan preferences biased the forecasts of voters to a small degree (projection effect).

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Forecasting the Outcome of a National Election:
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Predicting the outcome of elections is a perennial issue for politicians, journalists, and academics and big business for polling firms. The media reports extensively about pre-election polls, and a majority of voters will encounter such information during the course of a campaign. For the most part, the polls of professional polling firms tend to perform rather well and allow fairly accurate predictions of upcoming elections. Less is known about how well individual experts can predict the outcome of upcoming elections, in particular in comparison to average voters and those who more or less lack any information about the elections.

This paper addresses this gap by investigating the forecasting performance and confidence of three different groups five days before the 2005 national election in Germany. The first group consists of political experts who should have superior knowledge and skills. The second group consists of voters who, paraphrasing Lewis-Beck and Skalaban (1999), as "members of the polity" should be able to make reasonable forecasts. The third group consists of novices, or naïve outsiders, who lack any in-depth knowledge about the electoral system in general and the upcoming election in particular.

In the case of non-experts, the effect of having access to poll information on the forecasting performance and confidence is evaluated. Half of the questionnaires of the non-expert samples included poll information in the form of a figure showing the changes in predicted party vote shares over the previous three months. Finally, the paper investigates whether pre-existing political preferences distort the predictions of non-experts (projection effect or wishful thinking).

The focus on the performance of *individual* experts is a notable departure from the more common approaches and discussions found in the literature, such as the accuracy of professional pre-election polls (e.g. Traugott 2005) or the success of competing (aggregate or macro-level) prediction models by quantitative modelers of elections (e.g. Wlezien 2001).

Factors Influencing Forecasting Performance

The Role of Knowledge: Experts vs. Non-Experts

Political experts would naturally be expected to have the best ability to make accurate election forecasts. As the label implies, expertise is based on knowledge, and knowledge should allow informed decisions. It might be noted that the label "expert" is often very loosely applied, in particular by the media. The definition of experts used here is strictly knowledge-based and thus an objectively measurable characteristic.

The claim of expert superiority rests primarily on cognitive skills. If experts are characterized and defined by a high level of political sophistication (Zaller 1992), they should be able to process political information very efficiently. Following Zaller (1992), sophistication might also be called awareness that facilitates the "reception" of relevant political information. In short, expertise basically refers to the cognitive skills of information acquisition. Consequently, if there is information such as professional pre-election polls available, experts should be aware of this information and able to make fairly accurate forecasts—assuming the polls are not misleading.

In practice, however, experts' superiority in terms of knowledge does not necessarily translate into superior forecasting performance. Camerer and Johnson (1991) call it a process-performance paradox and pose it as the memorable question: "How can experts know so much and predict so badly?" Whether it is stock-market forecasting (Törngren and Montgomery 2004), earnings forecasts (Andersson 2004), personality judgments (Garb 1998), sports predictions (Andersson, Edman, and Ekman 2005), or predictions of major political events or developments (Tetlock 2005), experts are not better than trained or experienced novices. Most strikingly, they cannot outperform simple statistical models that apply decision criteria and cues in a consistent manner (Camerer and Johnson 1991) or beat other minimal performance benchmarks such as Tetlock's (2005) "dart-throwing chimps."

The opposite case—lack of knowledge—has somewhat clearer implications. If no knowledge or information is available, forecasts become very difficult and inaccurate but not necessarily random. In areas such as forecasting the course of stock markets or the outcomes of sports events, naïve individuals tend to perform better than chance (e.g.

Törngren and Montgomery 2005, Andersson et al. 2005). But the ability to make meaningful or reasonable election forecasts requires adequate information or what Lewis-Beck and Skalaban (1999) call the "membership in the polity" (see also Irwin and Van Holsteyn 2002).

Hypothesis 1: Political experts and voters will not differ in their accuracy of election forecasts but both will outperform novices (naïve outsiders).

Even if experts are not necessarily better than non-experts in making forecasts, they have a distinctively superior opinion of themselves. Experts like to *think* they are better than non-experts and thus tend to be overly confident in their abilities (Andersson, Edman, and Ekman 2005). Tetlock (2005) puts this expectation quite succinctly: "The most distinctive cognitive marker of expertise should be relatively extreme and elaborately justified probability judgments that fare poorly against the evidence" (p. 43).

Hypothesis 2: Experts will be more confident in their predictions than non-experts or justified by their (less than stellar) success rate.

The Role of Information: Novices (Naïve Outsiders)

While the defining characteristic of experts is knowledge, the forecasting performance of experts is not better than that of trained novices. This suggests that either experts are not able to use their knowledge very efficiently, or that non-experts can easily overcome the knowledge gap, at least for a specific prediction task. Dolan and Holbrook (2001), for example, found knowledge to improve the forecasting accuracy of voters. It would seem reasonable to conclude that ready access to information should narrow or even bridge the gap in knowledge between experts and non-experts. But the effect of information should depend on the pre-existing level of knowledge. The impact should be dramatic for complete novices but much more limited or even non-existent for experienced non-experts who are "members of the polity." Such a pattern has been found, for example, in a recent study of sports predictions (Andersson et al. 2005).

Hypothesis 3: Access to information can compensate the lack of knowledge and improve the accuracy of predictions of non-experts.

Access to information has not only been shown to increase the accuracy of predictions of naïve participants, but to have a positive effect on the confidence in their forecasting abilities as well (Davis, Lohse, and Kottemann 1994, Oskamp 1982). This effect seems to happen regardless of the level of knowledge. Consequently, the preceding hypothesis has a corollary:

Hypothesis 4: Access to information will increase the confidence of predictions.

The Role of Political Preferences: Projection Effects

Research in (political) psychology offers a quite different perspective on people's ability to predict election outcomes. In fact, it questions whether voters are able to form accurate expectations. A very solid finding in a variety of settings is the tendency to rationalize existing political preferences and to project them on expectations, often called *wishful thinking*, which Babad (1995) defines as "the link between a *preference* (whish) and a *prediction* of a future outcome (expectation)" (p. 285) (e.g. 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 und Skalaban 1989, Mutz 1998).

In the case of Germany, Schoen (1999, 2000) has shown that expectations about the chances of small parties to pass the 5%-threshold for entry into parliament are affected by party identifications. Supporters of a party tend to overestimate the chances of their preferred party (or its coalition partner) and to underestimate the chances of opposing parties. Independents, on the other hand, seem to have an apparently objective expectation (that is, they match the sample average). It would not be reasonable to expect the extreme case that expectations are entirely endogenous, based on long-term party identifications (e.g. Schoen 2000). But it would be very

reasonable to expect existing preferences to affect expectations in addition to external information sources.

Hypothesis 5: Political preferences will bias the predictions (projection effect).

A second question is whether every voter is affected by the projection effect in the same way or whether there are factors that work against this tendency, such as the motivation for making a forecast or access to relevant information. Cognitive 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 maximise accuracy while an "intuitive lawyer" wants to support existing conclusions (Baumeister & Newman 1994). In particular political experts should have a (professional) motivation to make accurate judgements. It would be in their interest to avoid projections. The same applies to non-experts given the right incentives. For example, election futures markets pose the forecast question in a similar way and participants who predict more accurately earn higher payoffs. Hendrich and Roerich (2000) found that while participants with a party preference had a portfolio structure (party shares) biased towards their party preference, they generally paid only average or sub-average prices for their "home" party stocks—the equivalent of accurate forecasts. In short, a monetary incentive to make accurate forecasts seems to work against projection effects.

Access to information should also work against the projection effect. Unless an individual chooses to disregard or misperceive factual information, factual information should constrain the tendency of projection. 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. With this inconclusive evidence in mind, our final hypothesis is more tentative:

Hypothesis 6: Access to information constrains projection effects.

Method

Participants and Design

The hypotheses were tested with data collected five days before the German national election on September 18, 2005. The goal was to sample respondents from three different target groups: political experts with a high level of political knowledge, voters with average political knowledge, and novices without any in-depth knowledge. According to Hoffman et al.'s (1995) "guild" terminology for different levels of expertise, the latter group with the lowest or ignorant level of knowledge might also be called naivettes.

Experts. The sample of political experts was drawn from a mailing list of *AK Wahlen*, a working group of academics and practitioners interested in elections and affiliated with the German Political Science Association (DVPW). From this list of 111 email addresses, 103 valid emails were obtained (8 returned with an error message as undeliverable). The 103 list members were contacted by a personal email on September 13, 2005, between noon and 2pm, and asked to return the attached questionnaire the same day. 49 individuals returned the questionnaire by email or postal mail, resulting in a response rate of 48%.[1]

Voters. The sample of voters was drawn from students visiting the dining hall of the University of Mannheim. The researchers and research assistants personally recruited 69 students between noon and 2pm on September 13, 2005. Students who agreed to participate immediately completed the questionnaire. 62 complete and eligible questionnaires were returned.[2]

Novices. The sample of novices consisted of students attending a lecture at the Stockholm School of Economics. Around 11:45am on September 13, 2005, the students were approached by assistants of the researchers and asked to fill out the questionnaire

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[1] 26 questionnaires (53%) were returned the same day and 12 (24%) the following day. 2 (4%) and 4 (8%) arrived two or three days later. Five questionnaires (10%) were returned as hardcopy by mail.

[2] 69 questionnaires were distributed. Seven of the returned questionnaires were dropped from the German sample. Three questionnaires were largely incomplete (in particular no forecasts), two respondents filled out their questionnaires jointly, and two respondents were not eligible to vote in the upcoming German election.

(in Swedish). Seventy-three students agreed to take part. 71 complete and eligible questionnaires were returned.[3]

Incentives for non-experts. In order to give experts and non-experts an equivalent accuracy motivation, non-experts received a financial incentive for participation and accurate forecasts. Four €50 gift certificates for Amazon.com were promised to the two German and two Swedish students would best predict the outcome of the German national election on September 18, 2005 (*Vorläufiges Amtliches Endergebnis* or preliminary official result, announced one day after the election). Students were told that they competed with approximately 30 other students for one gift certificate.[4]

Manipulation of poll information. The non-expert samples of voters and novices were randomly assigned one of two versions of the questionnaire. Half of the questionnaires included a figure that summarized the daily average party vote share predictions by Germany's leading polling firms over the previous three month (see Figure 1). It is similar to figures frequently found in German newspapers, magazines, and television news (in print, on screen, or online). The expert sample, on the other hand, received a shortened questionnaire without poll information or questions about political preferences.

Dependent and Independent Variables

The questionnaire collected information about various aspects, in particular different forecasts for the election and about the political preferences, the general political knowledge, and the demographics of the respondents.

Forecasts of party vote shares. Participants were asked to estimate the party vote shares of five parties that were expected to pass the 5%-threshold for entry into parliament as well as a residual "other" category. The parties included the two members of the incumbent governing coalition, the Social Democrats (*SPD*) and the Greens

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[3] 73 questionnaires were distributed but two of the returned questionnaires were dropped from the Swedish sample. One questionnaire was largely incomplete (in particular no forecasts) and one respondent was a German citizen.

[4] On average students took less than ten minutes to fill out the questionnaire. Thus, the expected payoff of €1.66 did cover opportunity costs, which are usually measured as alternative employment opportunities (in this case, for or as student assistants).

(*Bündnis 90/Die Grünen*), and the two main opposition parties, the Christian Democrats (*CDU/CSU*) and the liberal Free Democratic party (*FDP*). It also listed a new and far left party (*Die Linke.PDS*) that had resulted from a cooperation agreement of the PDS, a socialist party strong in the Eastern part of Germany, and the WASG, a new leftist party of dissatisfied former SPD and/or labor union members that had constituted itself mostly in the Western part of Germany.

After listing the forecasts, respondents were asked to indicate their certainty in the forecasts in two different ways. First, they gave a self-assessment by rating their certainty for each party vote share prediction on a 9-point scale, ranging from highly uncertain to highly certain. Next, respondents were asked to report 90-percent confidence intervals by listing lower and upper limits of the expected vote shares for each party.

Forecast of turnout. Respondents were also asked to predict the expected turnout in the upcoming election. The question provided respondents with a 10-point scale that covered the most relevant 50-90 percent range in 5-percentage point intervals (as well as options for higher or lower forecasts, respectively). This prediction was followed once more by a certainty self-assessment.

Political knowledge. Participants were asked to answer 13 factual knowledge questions (Zaller 1992), three with an international focus (e.g. name of vice-president of USA, number of countries in the European Union) and 10 with a German focus (e.g. president of German parliament, current function of Angela Merkel). A summary scale adds up the number of correct answers ($\alpha = .93$).

In addition, respondents also indicated in yes/no format whether they recently had read or heard anything in the news about the German election and, if yes, whether they recently had read or heard anything about a pre-election poll.

Familiarity and rating of parties. Voters and novices were also asked two questions about the five most relevant parties. First, respondents indicated their familiarity with the five parties on 6-point scales, ranging from "I have never heard from this party" to "I know this party very well." Second, they provided their rating or evaluation of each party on 10-point scales, ranging from "I don't like it at all" to "I like it very much," with an additional "Don't know" option. Experts were not asked these

questions for two reasons. First, it was assumed that they were—by definition—highly familiar with the parties to begin with. And second, no questions about party preferences were included to insure that they would respond to the questionnaire.

The questionnaire also collected other formal and demographic information, including the start and end time of completing the questionnaire.

Results

Sampling Assessment and Manipulation Check

The success of the purposive sampling of specific target populations (experts, voters, and novices) as well as the experimental manipulation (poll information for non-expert respondents) was assessed by comparing the groups on relevant characteristics. Non-expert respondents who received a questionnaire with the additional poll information required on average more than one additional minute to complete the questionnaire compared to respondents without poll information (Table 1). This difference is statistical significant for novices. This result suggests that participants paid at least some additional attention to the poll information. Overall, experts took the longest and on average required nearly 12 minutes to complete the questionnaire. Novices without poll information took the least time and finished after slightly more than eight minutes.

A comparison of the average political knowledge in each group shows that the sampling procedure was successful. Experts answered about 12 out of 13 questions correctly and had the significantly highest level of knowledge. The number of correct answers drops to about 10 for voters and to less than 3 for novices. In other words, experts and voters leave the novices far behind. However, the scores of the two voter groups show an unexpected difference. The level of knowledge of voters who received poll information was about one point lower than the level of knowledge of voters who did not receive the poll information. As a consequence, the (nearly significant) different levels of knowledge for the two voter groups could be a potentially confounding factor and make a comparison of the performance of the two voter groups somewhat problematic.

For all other indicators, the two German voter groups and two Swedish groups of novices show the expected pattern, only differences between the two countries but not within each country. According to the average score of the five party familiarity ratings, voters were very familiar with the five relevant parties while novices claimed to have heard about most parties but did not indicate any knowledge about them. Basically all German voters had read about the election in the news and about 90 percent had read or heard about pre-election polls. This suggests a very high level of political information among the voters shortly before the election. Among the Swedish novices, only about half had read or heard anything about the German election and only about 15 percent had read or heard about a poll. In short, the novices had no in-depth knowledge about the election. Overall, the sampling procedure and manipulation were successful with the exception of the knowledge difference between the two voter groups.

Forecasting Performance

Forecasting abilitiy. Three indicators were used to compare the prediction ability of the five groups. Unlike experts and voters, nearly a quarter of the novices failed to provide a confidence interval for the party vote share predictions (Table 2). This clearly reflects a lack of information among novices and a high level of uncertainty. Second, experts were able, with very few exceptions, to report confidence intervals that included their own vote share predictions (94%). Non-expert participants were more likely to place at least one prediction outside the interval (70%-87%), suggesting either a lack of concentration while filling out the questionnaire or a more fundamental failure to understand the task. The worst performance was given by the voters with poll information. Nearly a third of this group made one or more mistake, suggesting a fairly large number of inconsistent predictions.

This pattern is further confirmed by looking at the number of implausible forecasts in each group, defined as forecasts that fall outside a reasonable target range for each party (such as 25 to 45 percent of the SPD; see Table 2 for details). Experts and most voters passed this plausibility test, but 11.8 percent of voters with information failed this test. The evidence for novices is striking. As expected, those without poll information largely failed to give plausible predictions (77.4%). The failure rate for those

who received poll information dropped to a fairly small 15 percent. This suggests that even a short encounter with relevant poll information allows even largely uninformed respondents to make fairly plausible predictions (as predicted by Hypothesis 3). In short, it does not take much effort and time to largely bridge the gap to experienced members of the polity when pertinent information is available or accessible.

Forecasting accuracy. The accuracy of the forecasts can be assessed relative to the actual outcome of the election five days later (based on the official preliminary election result; see Table 4 for party vote shares). Three different criteria will be used for this assessment, the overall absolute prediction error for the party vote shares, the directional deviation of specific party share predictions from the election result, and the accuracy of the turnout prediction. For each criterion, the performance of the five groups of experts, voters, and novices will be compared. Because forecasts can fluctuate widely—in particular among novices without poll information—both medians and means are reported and tested.

Starting with the overall accuracy of the party vote share forecasts, the mean absolute error (MAE) of the party vote share predictions was determined.[5] By looking at both the medians and means of the MAE, the five groups exhibited a fairly clear pattern of three different levels of accuracy (Table 3). Experts had the lowest MAE of all the groups, and the expert mean is significantly different from the other group means. By making fewer errors, political experts were more successful than predicted in Hypothesis 1. Both voter groups and novices with access to poll information constituted the second level of accuracy. As suggested by the plausibility test reported above, once people with hardly any knowledge of a country receive pertinent poll information, they become able to make fairly accurate predictions of the election outcome. The forecasting accuracy of novices with poll information is thus fairly equivalent to voters with considerable pre-existing knowledge. Novices without any information, on the other hand, had the significantly highest MAE. No matter whether measured by means or medians, the group differences show a similar pattern. Using medians, the better

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[5] The mean squared error (MSE) measure, which gives more weight to larger deviations of the forecast from the individual party results, provides qualitatively the same results and is therefore not reported.

performance of the experts fails to be statistically significant in comparison to two other groups.

A comparison of the two voter groups shows that access to poll information did not further improve the accuracy of the forecasts. The latter finding, however, has to be taken with a grain of salt. Because voters with poll information also had a considerably lower level of political knowledge, the advantage gained by access to information might have been negated by the knowledge difference.

Overall, the evidence supports Hypothesis 3 and suggests that the effect of information is conditional on the pre-existing level of knowledge. It is fairly dramatic for novices who quickly gain the ability to compete with more knowledgeable voters. However, the effect disappears among the two voter groups.

Assessing the forecast performance only by the overall indicator of absolute error of predictions does not necessarily tell the whole story. In particular a low average MAE for experts does not preclude that experts, as a group, are more biased than other groups. In other words, even if a group has fairly high deviations on average, the average group prediction might cancel out these differences and be more accurate than the average prediction of a group that has lower average deviations but that systematically over- or underestimate an outcome.

Table 4 summarizes the average deviations of the party forecasts from the election result for each group. Ignoring for a moment novices without poll information, the most striking pattern are not differences between experts and non-experts but a systematic overestimation of the vote share of the CDU and an underestimation of the FDP and Left party shares. This pattern appears to match the misleading professional pre-election polls (as summarized and represented in Figure 1). These "inaccurate" expectations were obviously widely shared among both experts and non-experts. Only the vote shares of the two parties of the governing coalition, SPD and Greens, were predicted quite accurately.

Turning to the performance of the different groups, experts suddenly lose their luster. As a group, they were only more accurate in the case of the SPD (if measured by the group mean). In all other cases, experts were not better or worse than at least one other group of non-experts. In particular in the case of the universally "overrated" CDU,

experts offered the highest overestimation of the vote share by approximately 6 percentage points. As a consequence, experts might do better than expected as far as the overall performance is concerned, but this does not prevent them from offering systematically biased predictions for specific parties.

It is far from clear how novices without information developed their predictions. With probably very few exceptions, these respondents neither had preexisting knowledge about the German political situation nor did they receive any information that would have helped their forecasts. While one strategy would be to answer randomly, another option is to use the more familiar Swedish party system and to extrapolate the Swedish party strengths to forecasts for equivalent German parties. While such a "Sweden heuristic" was consistently used by only four participants, two group-level party forecasts differ strikingly from the other four groups.[6] More specifically, Swedish respondents without information underestimated the CDU by ten percentage points and overestimated the FDP by five percentage points. It is possible that these deviations reflect in part the Swedish party strength where the Christian Democrats (*Kristdemokraterna*) are one of the small parties and the Liberal Party (*Folkpartiet liberalerna*), the only possible equivalent of the FDP, is the third largest party (13.3 percent in the last Swedish general election).

The third criterion to assess the forecasting accuracy is the turnout prediction. Participants were asked to predict the expected turnout of the upcoming election. In this case, the poll information manipulation for voters and novices should not have any effect because it did not report any information about turnout. Because respondents indicated the turnout on an ordinal scale (with scale points representing 5-percentage point intervals), the predictions were categorized as follows: those who picked the interval with the actual election turnout (77.7%) were classified as correct and others classified according to whether they overestimated or underestimated actual turnout (Table 5). An additional column lists the percentage of respondents who made a "major"

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[6] The Sweden heuristic was operationalized and assessed similar to the plausibility test for German forecasts: The number (or percentage) of respondents who made vote share predictions that fell within a range plausible for the current strength of the Swedish parties. It should be noted that some parties, most notably the Social Democrats and the Greens, have a very similar strength in Germany and Sweden. This makes the assessment of the Sweden heuristic highly ambiguous for these parties.

prediction error, that is, made a turnout prediction that differed by more than five percentage points from the actual result.

The results show primarily a striking difference between experts and the four non-expert groups, while the latter are very similar. Experts were marginally better at predicting turnout but overwhelmingly and consistently overestimated it by one scale point (about five percentage points). The non-experts, on the other hand, mostly underestimated turnout, and both voter groups do this to a major extent. How can this be explained? Like the misleading predictions for the CDU and FDP in the published pre-election polls, the professional predictions of turnout suggested a rate of 80 percent or higher. But unlike the party vote share predictions, the turnout information was not as widely reported by the media. It was apparently picked up by experts but missed by the voters. The non-experts, German and Swedish students, seem to have a rather skeptical view of the German electorate and its willingness to participate in national elections. In summary, the turnout evidence suggests once more that experts are skilled at picking up pertinent information, but that this skill does not necessarily result in more accurate forecasts.

Confidence in Forecasts

The forecasting literature suggests that one defining characteristic of experts is overconfidence, the inflated belief in one's ability to make accurate predictions—at least when compared with the actual performance.

In this respect, the experts conform to expectations. According to the self-reported confidence in party vote share and turnout forecasts, experts have the highest confidence in their own predictions (Table 6). For party vote share predictions, experts are closely followed by voters without poll information. For turnout, they are significantly more confident than any other group. The most significant confidence gap for party vote shares exists between voters and novices. Even with poll information, novices felt fairly uncertain about their forecasts. Without any poll information, the forecasts became highly uncertain.

In addition to self-reported confidence in the forecasts, confidence can also be assessed by using the size of the confidence intervals for the party vote share

predictions as criterion. The average sizes of the confidence intervals for the five groups are listed in Table 7 (respondents who did not give a confidence interval are necessarily excluded from this analysis). Once again, experts differ from non-experts with significantly smaller confidence intervals, with a very modest average size of about 3.5 percentage points. This clearly reflects the experts' believe in their ability to make highly accurate forecasts. The intervals of the voter groups were considerably larger, and they peak with a median size of 14 percentage points for novices (this in addition to the fact that 25 percent of the members of this group did not report a confidence interval in the first place). This pattern very clearly reflects the expected levels of confidence for the different groups.

With Camerer and Johnson's (1991) process-performance paradox in mind, it is reasonable to ask whether the highly confident confidence intervals of the experts were justified. In other words, are the reported confidence intervals sufficiently large and appropriate? This question can be assessed by calculating the frequency with which the actual party vote shares fell inside the reported confidence intervals.[7] As Table 7 shows, the experts paid a steep price for their small confidence intervals. On average, only 44 percent of their confidence intervals covered the actual party vote shares. Voters, with their larger confidence intervals, already captured over 60 percent of the election outcomes, while novices had a success rate of over 70 percent (for those who reported a confidence interval). This finding rather strikingly supports the notion that experts are overconfident. This pattern of results is mostly in line with findings of previous research (e.g. Klayman, Soll, González-Vallejoc, and Barlas 1999).

Sources of Poll Information

One striking result reported above is the fact that the forecasts of the experts, while overall better than expected, exhibit some systematic biases, such as the overpredictions of the CDU vote share and the turnout rate. How can these systematic biases be explained? To answer this puzzle, we turn to the professional polls that were

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[7] The indicator was operationalized for each respondent as the percentage of predicted confidence intervals that cover the actual party vote shares in the election. Because several participants did not report a confidence interval for the residual category of "other" parties, a percentage is a more appropriate measure than a simple count of successful "hits."

available five days before the election and compare them with the forecasts of our respondents. The reference point was determined as the average party vote shares predicted by six leading German polling firms.[8] Following the approach for the assessment of the overall accuracy of the party vote share forecasts above, the mean absolute error (MAE) of individual predictions from the available pre-election polls was calculated (that is, using the professional polls instead of the election outcome as baseline). In other words, the MAE expresses how much the predictions of the participants deviate from the published polls.

The evidence is very clear (Table 8). The predictions of the experts differ on average by less than one percentage point from the published polls. Their expertise is obviously based on a close reading or awareness of the available professional polls. The two voter groups and the novices with poll information show considerable higher deviations from the polls, but they are still below the equivalent deviations from the actual election outcome (as reported earlier). Novices without poll information deviate the most.

The evidence supports the notion that experts in the domain of election forecasting have superior information processing skills and motivation and successfully use the best available information to make fairly accurate and consistent predictions. At the same time, however, they are overconfident and fail to consider the possibility that the available information might not be as reliable as they think. The experts could blame, with some justification, the professional pollsters for providing unreliable data. The pollsters, in turn, could blame the dishonest respondents.

Political Projection Effects

Compared to the experts, the forecasts of the non-experts exhibit more variation. Some of that variation might be explained by systematic biases of the respondents. According to the public opinion research reviewed above, pre-existing party preferences

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[8] The indicator of the pre-election polls is based on the average party vote shares reported in the last forecast before or on September 13 by the six polling firms Allensbach, Emnid, Forsa, Forschungsgruppe Wahlen, Gesellschaft für Markt- und Sozialforschung (GMS), und Infratest dimap as reported by the independent, non-partisan, and non-profit website Wahlrecht.de (http://www.wahlrecht.de/umfragen/). The forecasts were very similar. The forecasts for specific parties differed at most by 1.5 percentage points.

are a likely source of biased forecasts. A test of this hypothesis is only possible with the two voter groups because no data on experts' party preferences was collected, and the lack of familiarity with the German parties precludes using naïve Swedish respondents for this purpose. Because projection effects should become less likely with access to factual information, the following analyses distinguish between voters who received poll information and those who did not. Two tests were performed, initially using all voters, followed by a test of relevant subgroups.

The most straightforward test of projection tendencies merely looked at the correlations of party ratings and predicted vote shares for the five relevant parties. This is not a causal test of projection effects, but a basic assessment whether an association of ratings and predictions exist. Such an association might represent a projection effect, but it could as well be a bandwagon effect where voters rate those parties higher that have a better chance of winning. However, the evidence for projection effects is much stronger than for bandwagon effects (e.g. Abramson et al. 1992).

The results in Table 9 do not show much evidence of strong associations. Out of 50 correlation coefficients, only 9 are significant. The significant correlations exist mostly for respondents without poll information (6 vs. 3). With one exception, they have the expected sign. More specifically, the SPD rating correlated positively with the SPD vote share and negatively with the CDU vote share in the absence of poll information. The Green party rating was positively associated with the Green party vote share (but also correlated unexpectedly and significantly with the FDP vote share for respondents with poll information). The strongest evidence for the association of party ratings and vote shares was offered by the FDP party rating. With or without poll information, the FDP rating correlated significantly with the CDU vote share (the designated coalition partner). In the absence of poll information, the FDP rating was strongly associated with both the SPD vote share (negatively) and the FDP vote share (positively). Overall, however, the evidence is weak.

A more stringent test of projection effects is possible by comparing two partisan blocks of respondents, those who gave the highest party ratings to one of the parties on the Left (SPD, Greens, or both) and those who preferred one of the parties on the Right

(CDU, FDP, or both).[9] Table 10 reports the differences in party vote share predictions for the four traditional parties individually and combined into party blocks. More specifically, the predictions of the supporters of the Right parties were subtracted from the predictions of the supporters of the Left parties. And indeed, the predictions of the Left block supporters were consistently higher for parties on the Left and lower for parties on the Right, with only one exception. Left parties' supporters with poll information predicted the FDP vote share 1.58 percentage points higher than Right parties' supporters. This difference, however, was not significant. The differential predictions for the two party blocks (2.97 and 2.60 percentage points for Left and Right parties) reach statistical significance only for respondents that did not receive poll information. This effect offers limited support for the expectation that party preferences shape forecasts (Hypothesis 5). Most notably, the effect appears only in absence of access to poll information (Hypothesis 6). Thus, the extent of the projection effect was limited. This finding corresponds to findings from the Netherlands, where a national survey of Dutch voters before the 1994 election also showed only very limited projection effects (Irwin and van Holsteyn 2002).

Conclusion and Discussion

This paper investigated the forecasting performance and confidence of experts, voters, and novices five days before the 2005 general election in Germany. Participants were asked to forecast the party vote shares of the five largest parties, to provide associated confidence intervals, and to forecast the expected turnout. Participants also indicated their confidence in the forecasts. An experimental manipulation consisted of providing poll information in the form of a figure with half of the questionnaires of the non-expert samples. In addition, the tendency to project pre-existing preferences on forecasts was investigated for the voter groups.

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[9] The vast majority of respondents can be classified in these two blocks by their party ratings. In the group with poll information, 31 (91%) respondents fall in one of these two blocks, in the group without poll information, the number is 25 (83%). The remaining (excluded) respondents either preferred the leftist party *Die Linke.PDS* (2 respondents) or a grand coalition of CDU and SPD and/or have other multiple ties that cannot be classified in the Left or Right parties block.

Most of the hypotheses received support. In a departure from previous research, the political experts in our study had a somewhat higher prediction accuracy than non-experts. Unlike experts in the domains of stocks and sports, political experts (of electoral behavior) seem to be able to translate their higher level of knowledge into slightly more accurate predictions overall. As a group, however, experts did not outperform informed non-experts. Likewise, experts were hardly better than non-experts at predicting the turnout of the election. They pretty consistently overestimated the turnout. The worst performance, on the other hand, was given by novices without access to poll information. The accuracy of their party vote share predictions was very low. Thus, hypothesis 1 received only partial support.

As predicted by hypothesis 2, experts were generally found to be more confident than non-experts in their predictions, whether by the subjective measure of confidence ratings or the objective measure of confidence interval size. One might argue that this high level of confidence was justified by the high(er) accuracy of the forecasts—experts had the lowest overall MAE. But this high level of confidence had its price. The confidence intervals of most experts were so small that they failed to capture the actual outcome of the general election. Based on this criterion, political experts are decidedly overconfident in their prediction ability. They are good, but not as good as they think.

Access to information had only a conditional effect. As predicted, it dramatically increased the prediction ability and accuracy as well as the confidence of novices. But access to information did not affect the voters. It neither increased the prediction accuracy nor the confidence in the predictions of the latter group.

A comparison of the party vote share predictions at the group level shows experts exhibited considerable biases that were similar or even higher than those of non-experts, in particular for the CDU and the FDP party vote shares. These systematically biased predictions by both experts and non-experts, however, cannot be attributed to bad prediction skills. The reason for these forecasts can rather be found in the obviously misleading information provided by the leading German polling firms (or the respondents who mislead the polling firms). If the relevant information is unreliable and misleading, neither experts nor informed non-experts can be expected to make highly accurate predictions.

It should also be noted that the evidence reported in this paper is based on the specific and idiosyncratic circumstances of one particular election. If replicated at a different time and under different circumstances, the evidence might look quite different. But because the results mostly correspond to the literature reviewed above, there is no reason to believe that experts and non-experts would perform very differently under different circumstances.

Finally, the study found only limited evidence of a projection effect. Some of the party ratings of the voters were associated with party vote share predictions, in particular if poll information was not available. Supporters of parties on the Left (SPD and Greens) had a tendency to overpredict the vote shares of their preferred parties compared to supporters of parties on the Right (CDU and FDP), and vice versa. Access to poll information again diminished this effect.

There are at least two reasons for the weak findings of a projection effect in our sample. First, the study took place only a few days before the election. At this time, basically all voters had heard or read about the upcoming election, and the vast majority was familiar with the polls. Given such an environment saturated with relevant (if biased) information, the appearance of strong projection effects becomes highly unlikely. If the same study had taken place several months before the election, at a time when poll information was much less prevalent, the effect might have been much stronger.

Second, it depends on the motivation for a forecast. The participants in our study had a strong motivation to make an accurate prediction of the election outcome. They could win a gift certificate by making the most accurate prediction. It is reasonable to expect that this incentive worked against the projection effect. Given these two limiting circumstances, it is remarkable that small but fairly consistent partisan differences still emerge.

In conclusion, the forecasting of elections appears to be one domain where political experts have a slight edge. While experts as a group do not outperform non-experts, individual experts make, overall, more accurate predictions. In other words, if only a single individual can be asked for an election forecast, an expert would be the better choice.

The evidence also shows that the availability and quality of relevant information is a crucial factor. Both experts and non-experts have to rely on information to make good election forecasts. With access to relevant information, even naïve outsiders are quickly able to make fairly accurate predictions. But when the information is misleading, even experts are prone to errors.

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Table 1: Group Characteristics

	N	Time (min.)		Political Knowledge (0-13)		Familiarity with Parties (0-5)		News (%)	Polls (%)
Experts	49	11.73_a	(3.46)	12.16_a	(0.96)	n/a		n/a	n/a
Voters (with info)	33	$10.66_{a,b}$	(3.90)	9.27_b	(2.10)	3.67_a	(.64)	97.0	90.9
Voters (no info)	29	$9.50_{b,c}$	(2.83)	10.24_b	(1.88)	3.86_a	(.63)	100.0	93.1
Novices (with info)	40	9.63_b	(2.91)	2.90_c	(2.07)	1.18_b	(.93)	51.3	16.1
Novices (no info)	31	8.18_c	(2.31)	2.32_c	(1.90)	$.96_b$	(.66)	51.6	11.5
F/Cramer's V		12.55**		241.55**		143.57**		.53**	.78**

Note: Full Sample. Entries are means unless indicated otherwise, with standard deviations in parentheses. Means in the same column that do not share subscripts differ at p < .05
* p < .05; ** p < .01

Table 2: Prediction Ability

	N	No Confidence Interval (%)	Inconsistent Forecasts[a] (%)	Implausible Forecasts[b] (%)
Experts	49	6.1	6.1	0.0
Voters (with info)	33	0.0	27.3	12.1
Voters (no info)	29	6.9	13.8	0.0
Novices (with info)	40	22.5	12.5	15.0
Novices (no info)	31	25.8	19.4	77.4
Cramer's V			.26**	.70**

Note: Full Sample. Entries are percentages.
[a] One or more party vote share forecast(s) outside confidence interval.
[b] One or more party vote share forecast(s) outside the following ranges: SPD (25-45), CDU (30-50), Greens, FDP, & Left Party (0-15), and other parties (0-10).
* p < .05; ** p < .01

Table 3: Overall Accuracy of Party Vote Share Forecasts

	N	Mean Absolute Error (MAE)		
		Median	Mean	SD
Experts	49	2.30_a	2.32_a	(.33)
Voters (with info)	33	2.83_b	3.80_b	(3.12)
Voters (no info)	29	$2.67_{a,b}$	2.80_b	(.87)
Novices (with info)	40	$2.72_{a,b}$	3.68_b	(2.81)
Novices (no info)	31	5.18_c	6.95_c	(5.51)
χ^2/F		60.94**	12.51**	

Note: Full Sample. Medians and Means in the same column that do not share subscripts differ at p < .05.
* p < .05; ** p < .01

Table 4: Deviations of Party Vote Share Predictions from Election Result

	N	SPD (34.3%)[a]			CDU (35.2%)		
		Median	Mean	SD	Median	Mean	SD
Experts	49	$-.30_a$	$-.11_a$	(1.61)	5.80_a	6.03_a	(1.08)
Voters (with info)	33	$-.30_a$	$-.38_{a,b}$	(7.56)	4.80_a	1.42_b	(8.90)
Voters (no info)	29	$.70_a$	$.94_a$	(3.33)	4.80_a	4.94_c	(2.96)
Novices (with info)	40	$.70_a$	$-.25_{a,b}$	(7.96)	4.80_a	$4.08_{a,b,c}$	(7.61)
Novices (no info)	31	-4.30_a	-3.88_b	(9.53)	-10.20_b	-10.91_d	(11.77)
χ^2/F		2.42	2.49*		64.36**	30.51**	

	N	Greens (8.1%)			FDP (9.8%)		
		Median	Mean	SD	Median	Mean	SD
Experts	49	$-.60_a$	$-.55_a$	(.78)	-2.80_a	-3.14_a	(.70)
Voters (with info)	33	$-.10_b$	1.54_b	(4.81)	-2.80_b	$-.72_b$	(6.18)
Voters (no info)	29	$-.10_b$	$.32_b$	(2.04)	$-2.80_{a,b}$	$-2.94_{a,b}$	(1.67)
Novices (with info)	40	$-.10_{a,b}$	$.65_{a,b}$	(5.49)	$-3.55_{a,b}$	-3.20_a	(2.37)
Novices (no info)	31	$-.10_{a,b}$	$.38_{a,b}$	(4.49)	5.20_c	4.88_c	(8.02)
χ^2/F		13.91**	1.49		41.63**	20.17**	

	N	Left (8.7%)			Other (3.9%)		
		Median	Mean	SD	Median	Mean	SD
Experts	49	-1.20_a	-1.37_a	(1.09)	$-.90_{a,b}$	$-.83_a$	(1.21)
Voters (with info)	33	$-1.40_{a,b,c}$	$-.83_a$	(2.81)	$-.90_{a,b,c}$	$-.22_{a,b}$	(2.83)
Voters (no info)	29	$-1.70_{a,b}$	-1.63_a	(2.06)	-1.90_a	$-1.17_{a,b}$	(2.46)
Novices (with info)	40	$-.70_b$	-1.21_a	(2.70)	$-.15_b$	$.06_b$	(2.66)
Novices (no info)	31	1.30_c	$.33_a$	(5.76)	$.60_c$	5.50_b	(18.60)
χ^2/F		19.63**	1.97		9.71*	3.84**	

Note: Full Sample. Medians and means in the same column that do not share subscripts differ at p < .05
[a] Percentages in parentheses represent the official preliminary election result (without Dresden). The final election result (including Dresden) brought one minor shift from SPD (34.2%) to Other Parties (4.0%).
* p < .05; ** p < .01

Table 5: Accuracy of Turnout Forecasts

	N	Underestimation (%)	Correct Range (%)	Overestimation (%)	Major Error (%)
Experts	49	4.1	30.6	65.3	2.0
Voters (with info)	33	60.6	21.2	18.2	57.6
Voters (no info)	29	65.5	20.7	13.8	55.2
Novices (with info)	38	60.5	26.3	13.2	28.9
Novices (no info)	31	74.2	22.6	3.2	64.5
Cramer's V			.44**		.38**

Note: Full Sample. Entries are means unless indicated otherwise, with standard errors in parentheses.
Means in the same column that do not share subscripts differ at p < .05
* p < .05; ** p < .01

Table 6: Self-Reported Confidence in Party Vote Share and Turnout Predictions

	N	Confidence in Party Vote Shares Forecast (1-9)		Confidence in Turnout Forecast (1-9)	
		Mean	SD	Mean	SD
Experts	49	5.72_a	(1.11)	6.41_a	(1.40)
Voters (with info)	33	4.91_b	(1.89)	5.09_b	(1.94)
Voters (no info)	29	$5.46_{a,b}$	(1.69)	5.41_b	(1.68)
Novices (with info)	40/38	3.50_c	(2.02)	3.53_c	(2.05)
Novices (no info)	31	1.65_d	(1.11)	2.97_c	(1.72)
F		38.65**		24.90**	

Note: Full Sample. Means in the same column that do not share subscripts differ at $p < .05$.
* $p < .05$; ** $p < .01$

Table 7: Confidence Intervals for Party Vote Share Predictions

	N	Size of Confidence Interval			Election Outcomes in Confidence Interval[a]	
		Median	Mean	SD	Mean %	SD
Experts	46	3.50_a	3.63_a	(2.26)	44.1_a	(22.0)
Voters (with info)	33	$6.67_{b,c}$	6.98_b	(4.11)	62.5_b	(23.9)
Voters (no info)	29	4.75_b	5.63_b	(2.99)	$63.6_{b,c}$	(21.5)
Novices (with info)	32	7.38_c	$11.33_{b,c}$	(16.62)	74.9_c	(25.4)
Novices (no info)	23	14.17_d	21.36_c	(21.12)	$71.2_{b,c}$	(22.1)
χ^2/F		70.66**	11.04**		10.39**	

Note: Full Sample. Medians and means in the same column that do not share subscripts differ at $p < .05$.
[a] Individual percentages are calculated by dividing the number of times the actual party vote shares fell inside the predicted confidence interval by the number of confidence intervals that a participant provided.
* $p < .05$; ** $p < .01$

Table 8: Overall Deviation from Pre-Election Polls

	N	Mean Absolute Error (MAE)		
		Median	Mean	SD
Experts	49	$.80_a$	$.85_a$	(.42)
Voters (with info)	33	1.73_b	3.37_b	(4.03)
Voters (no info)	29	1.80_b	1.90_b	(.95)
Novices (with info)	40	2.07_b	3.01_b	(3.12)
Novices (no info)	31	6.65_c	8.12_c	(5.53)
χ^2/F		73.04**	25.33**	

Note: Full Sample. Medians and means in the same column that do not share subscripts differ at $p < .05$.
* $p < .05$; ** $p < .01$

Table 9: Correlations of Party Rankings with Predicted Party Vote Shares

| | Party Vote Share & Poll Information | | | | | | | | | |
| | SPD | | CDU | | Greens | | FDP | | Left | |
	Yes[a]	No[b]	Yes	No	Yes	No	Yes	No	Yes	No
Party Ratings										
SPD	-.02	.34*	-.10	-.19	-.19	-.01	.08	-.47**	-.02	-.08
CDU	-.21	-.31*	.27	.10	-.25	.08	.29	.31*	.23	.03
Greens	.16	-.05	-.01	-.29	.20	.34*	-.19	-.05	-.26	-.08
FDP	.15	-.13	-.17	.34*	.34*	-.26	-.21	.60**	-.29*	-.02
Left	-.07	.18	.09	.12	.01	-.15	.06	-.06	.02	.18

Note: German Student Sample. Entries are bivariate correlation coefficients.
[a] n = 33.
[b] n = 29.
* p < .05; ** p < .01 (one-tailed)

Table 10: Relative Group Differences in Party (Block) Vote Share Predictions (Left Parties Block Supporters minus Right Parties Block Supporters)

| | Poll Information | |
	Left[a] - Right[b] (n=15/15) With Info	Left - Right (n=10/14) No Info
Left Parties Block	3.01	3.01*
SPD	2.70	2.37
Greens	.52	.64
Right Parties Block	-2.52	-2.71*
CDU	-4.37	-1.00
FDP	1.85	-1.71*

Note: German Student Sample. Entries are relative group differences in predicted party vote shares (in percentage points) by supporters of Left and Right parties (average predicted vote share by Left party block supporters minus average predicted vote share by Right party block supporters). Significant tests show whether each group difference is different from 0.
[a] Left = Highest party rating for SPD, Greens, or both.
[b] Right = Highest party rating for CDU, FDP, or both.
* p < .05

Figure 1: Chart for Poll Information Manipulation in Non-Expert Questionnaires
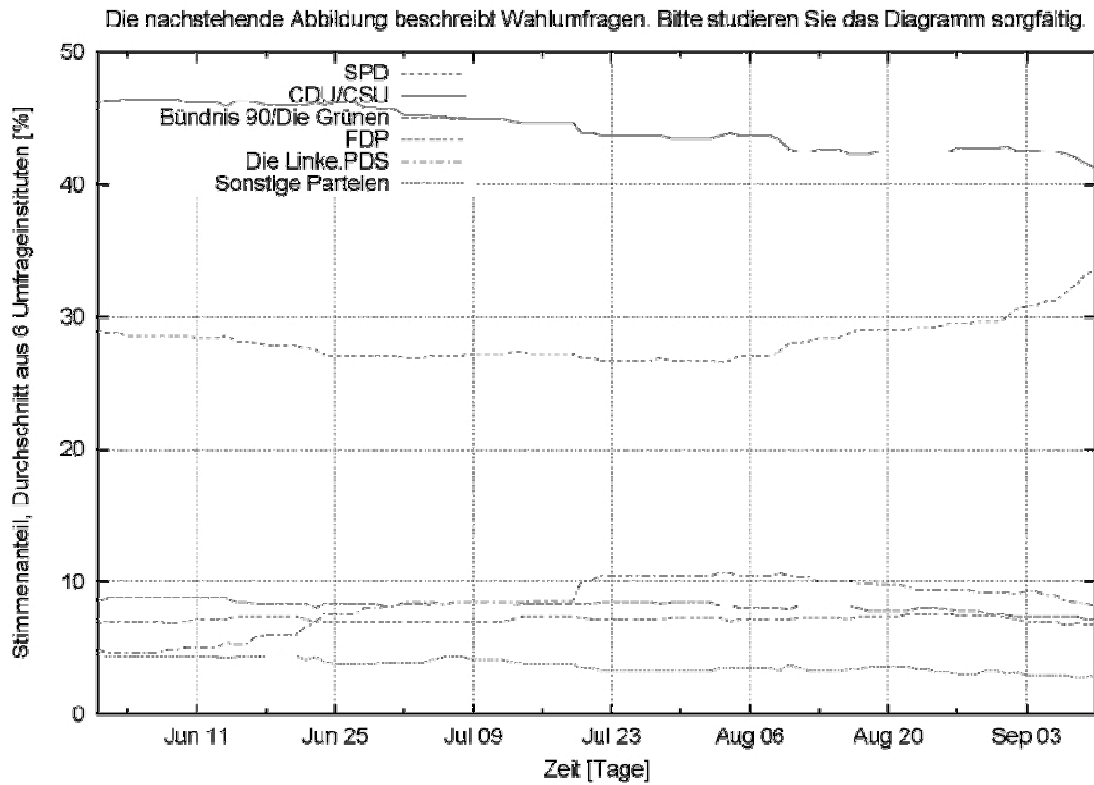
Source: Poll results represent an average of six polling institutes as reported by the independent, non-partisan, and non-profit website Wahlrecht.de (http://www.wahlrecht.de/umfragen/).