Wishful Thinking in Response to Events: Evidence from the 2021 German Federal Election

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Data availability statement

The data analysed in this study will be made freely available via OSF, along with code to reproduce all analyses, upon acceptance for publication.

Conflict of interest disclosure

The authors have no conflicts of interest to disclose.

Ethics approval statement

This project received full ethical approval from the FHASS Social Sciences and International Studies Ethics Committee at the University of Exeter, approval #489681. Respondents provided consent to participate in the study having been informed that the results would be summarised in publications.

Abstract

When making uncertain judgments about the political future, people consistently see desired outcomes as more likely. But when major events reduce uncertainty about what is possible in the future, how do people's expectations respond? In a panel study conducted during the 2021 German federal election, we find that citizens' predictions of likely coalitions converge after the election takes place, but even after this convergence those expectations remain marked by significant partisan gaps. The election result substantially reduces uncertainty about coalition formation—decreasing, but far from eliminating, differences in expectations between groups with different preferences. Our findings provide a clear case of static wishful thinking (contemporaneous association between preferences and expectations) without dynamic wishful thinking (divergence over time in expectations in line with preferences), suggesting that citizens' expectations of the future, regardless of their prior commitments, respond accordingly to events, but wishful thinking persists even in contexts of dramatically reduced uncertainty.

Keywords: expectations, updating, coalitions, wishful thinking

Under conditions of uncertainty, people who desire an outcome tend to rate it as more likely than those who oppose it—a phenomenon commonly dubbed 'wishful thinking' (Babad 1997; Krizan et al. 2010; Searles et al. 2018). But sometimes events unfold that drastically reduce uncertainty, narrowing the range of possible futures. In this Research Note, we assess how levels of wishful thinking respond to such uncertainty-reducing events. Concretely, we show that even though the results of the 2021 German federal election mostly led to a decrease in wishful thinking about the likely composition of the governing coalition, wishful thinking still persisted at significant levels in the post-election context.

The term 'wishful thinking' sometimes refers to 'a positive relationship between candidate preference and electoral expectations' (Searles et al. 2018, 890). This form of wishful thinking is *static* in that identifying it only requires observing contemporaneous differences in opinion about likely future outcomes between different (partisan) groups. Other times, wishful thinking refers to a specific pattern of expectations formation in which 'beliefs are updated in the direction of desired outcomes rather than what the evidence implies' (Melnikoff and Strohminger 2024, 1). This form of wishful thinking is *dynamic* in that it entails divergence in groups' opinions about likely future outcomes, towards seeing their preferred outcomes as more likely, over time. Evidence of static wishful thinking might be taken to imply the operation of dynamic wishful thinking, because theoretical accounts often posit that wishful thinking stems from different groups collecting and interpreting information differently and updating their beliefs in different directions (e.g. Barnfield 2023; Mongrain 2021; Rose and Aspiras 2020; Tikochinski and Babad 2023). However, just observing that expectations currently differ across groups with different preferences (measuring an association between party affect and expectations) does not imply that those groups have diverged from some previously more aligned expectations. Complicating matters further, the theoretical predictions of the partisan motivated reasoning models that are often cited in support of dynamic wishful thinking are difficult to distinguish in theory and in practice from models involving no motivated reasoning (Druckman and McGrath 2019; Fernández-Roldán and Barnfield 2024; Little 2025; Melnikoff and Strohminger 2024).

We contribute, primarily, to refining these theoretical accounts by demonstrating a case in which there are large, systematic, contemporaneous correlations between expectations and preferences without these preferences leading to a rejection of evidence when forming expectations. We show that, following a sudden reduction in aggregate uncertainty induced by the announcement of an election result, supporters of different political parties either converge in their expectations of those parties' chances of entering a governing coalition, or update those beliefs in roughly equal measure, but partisan differences in expectations remain. Secondarily, in demonstrating these patterns, we also contribute novel insights to the growing literature on coalition expectations (Bowler et al. 2021; Eberl and Plescia 2018; Meffert et al. 2011), by showing that wishful thinking persists in these expectations even after election results are announced. In other words, wishful thinking about government formation is not exclusively rooted in uncertainty about election outcomes.

In multiparty systems with proportional representation, parties often engage in bargaining processes to build a coalition large enough to form a government and take power. Prior to an election, the number of mathematically possible coalitions is unknown, and which parties are willing to work together is uncertain. Evidence suggests that wishful thinking is prevalent under such uncertainty—partisans expect their preferred parties to end up in government (Bowler et al. 2021). Perhaps the most informative cue voters might get during the campaign is a pre-electoral pact between parties to form a coalition together (Golder 2005). Indeed, a convincing pact of this kind between two or more major contenders would constitute an uncertainty-reducing event in its own right. In the absence of outright commitments, parties might nonetheless signal their preferences of which other parties they would be willing to form a government with, and these coalition signals can affect both voters' expectations and how they choose to vote (Bahnsen et al. 2020; Gschwend et al. 2017). Polls and media reports also provide voters with clues as to which parties may be able to join forces (Bowler et al. 2021; Eberl and Plescia 2018). But even when coalition signals and poll results are available, considerable uncertainty remains. Once the election result is known, uncertainty is substantially *reduced* by definitively ruling out certain combinations of parties that collectively cannot assemble a majority and by establishing a likely lead partner in negotiations. Elections, however, do not entirely *eliminate* uncertainty. There are

often different potential governing coalitions, and it remains unknown which one will carry the day, if any. It is therefore possible that wishful thinking about which parties are likely to form the coalition will persist in the aftermath of an election, even though that election might narrow the range of plausible futures. Assessing this empirical claim matters in its own right, because it is theoretically plausible that wishful thinking about which government will be formed could exacerbate disappointment, and democratic dissatisfaction, when reality disconfirms those expectations (see Krizan et al. 2010; Mongrain 2023; Plescia 2019).

We focus on the 2021 German federal election. In the lead-up to this election, the parties restricted information available to voters on likely coalitions by refraining from pre-electoral pledges except for ruling out coalitions with the far-right AfD. Polling for the election was also volatile and depicted a more fragmented partisan landscape than previous elections, leaving multiple plausible coalition options (Faas and Klingelhöfer 2022). This shift is consistent with broader trends in European elections: in Germany and elsewhere, mainstream parties tend to win fewer seats, meaning more parties are required to form a government (Debus 2021). Even after an election, it is often unclear who can form a successful coalition (Morini and Cilento 2020). The result of the 2021 election was conclusive enough to rule out coalitions that might previously have seemed possible, but inconclusive enough to leave political scientists and commentators room to speculate on which coalitions were most likely to be formed (Debus 2021; Emundts 2021).

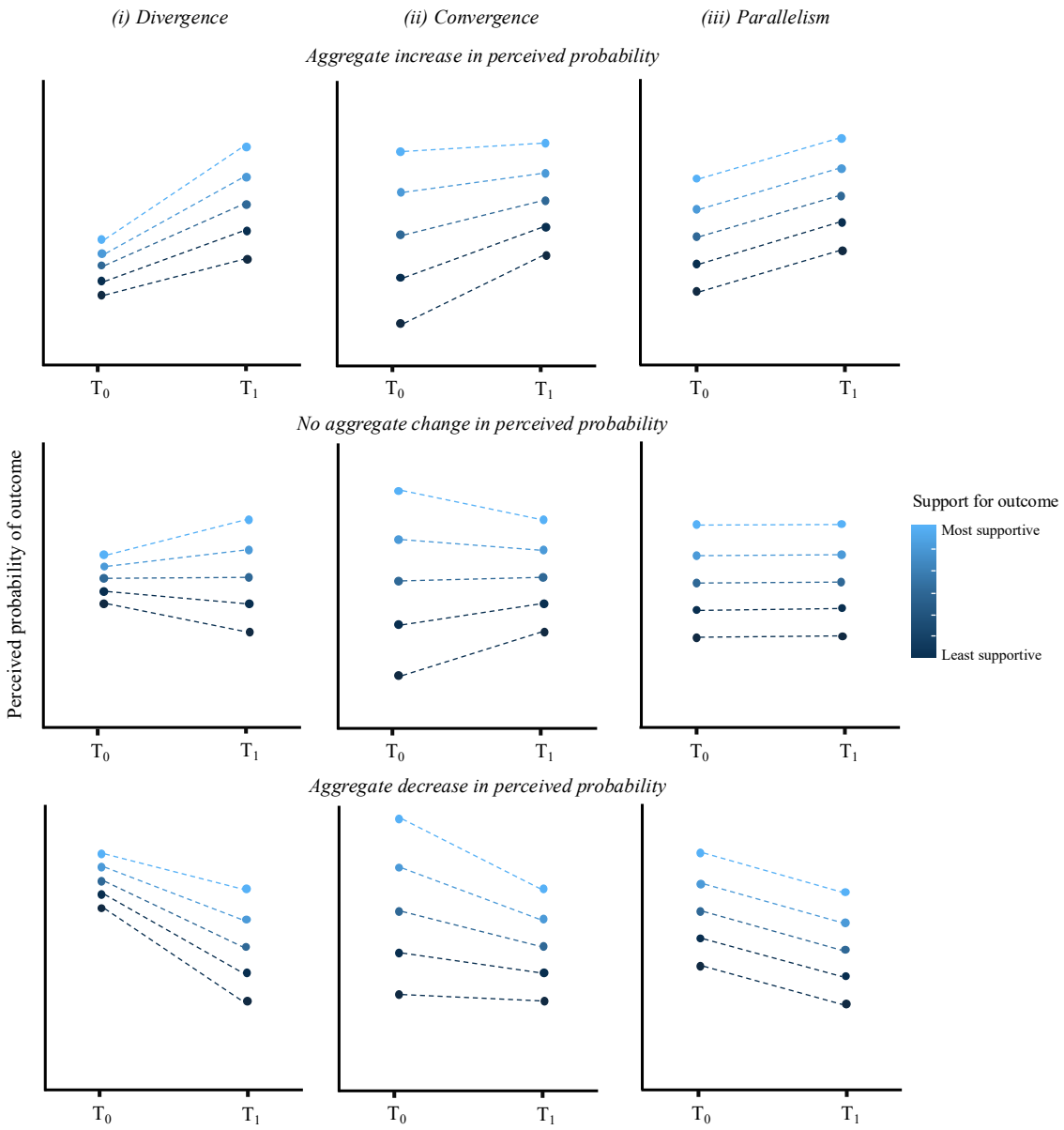
We conduct pre-registered analyses of data from an original pre- and post-election YouGov panel survey, complemented by exploratory analysis of German Longitudinal Election Study data, employing a combination of aggregate-level and individual-level measures. Our results reveal that the 2021 German federal election result led coalition expectations either to converge or shift in parallel, but in no case to diverge. Crucially though, wishful thinking was still present in the postelection context: within the much narrowed range of plausibility around coalition formation, partisans continue to be more inclined to think the most likely coalition includes their party, and systematically deem coalitions containing parties they prefer more likely.

Theory: Patterns of Expectations Updating

In broad outline, we posit three potential patterns of expectations updating, across attitudinal groups: (i) divergence, (ii) convergence, or (iii) parallelism. These patterns are visualised in Figure 1. Recent interventions have highlighted that these patterns can emerge under both Bayesian and motivated reasoning models of information processing (Druckman and McGrath 2019; Leeper and Slothuus 2014; Little 2021; Melnikoff and Strohminger 2024). Part of the reason these contradicting models can both predict all three patterns is that, as visualised in Figure 1, prior beliefs (T_0) can differ significantly between groups, as well as the extent to which those beliefs are updated in response to new evidence (see Little 2021). Similarly, all three patterns are consistent with static wishful thinking at both T_0 and T_1: in every case, those who are more supportive of an outcome deem it more likely. Only the divergence model is suggestive of dynamic wishful thinking. But the extent of such wishful thinking at T_1 is the same in every case, so observing T_1 alone does not distinguish between the three models.

(i) *Divergence*: Some evidence suggests that groups with different preferences differentially update in response to new information, creating divergence of factual beliefs, or divergence in how facts are interpreted (e.g., Bisgaard 2015; Gaines et al. 2007; Parker-Stephen 2013). On this account, groups with different preferences interpret new information as consistent with their preferred conclusions, bolstering those conclusions (Lord et al. 1979; Nyhan and Reifler 2010). Divergence can occur even if different subgroups are all moving in the same direction in response to new information.

Figure 1: Visualisation of theoretical expectation updating patterns.



Note. Left column visualises types of divergence, central column visualises forms of convergence, right column visualises parallelism. Points represent the perceived likelihood that a future outcome will be realised, expressed at either T_0 (pre-uncertainty reducing event) or T_1 (postuncertainty reducing event). Lighter (darker) blue points represent groups for whom the outcome would be more (less) preferable.

It is plausible that this same tendency shapes how expectations are updated in response to any new information with a bearing on likely outcomes (Barnfield 2023, 7). Those who most support an outcome may interpret events as significantly boosting that outcome's chances, whereas unsupportive people see it as making relatively less difference (top panel); or the latter group may come to think this outcome is less likely, while the former group's expectations remain relatively unchanged (bottom-left panel); or both groups may come to opposite conclusions (middle-left panel). In all three cases, the divergent pattern of updating consistent with partisan goals suggests dynamic wishful thinking between T_0 and T_1, which largely explains the static wishful thinking observed at T_1.

The lack of a direct, fully determinate link between election performance and entry into government in multiparty systems certainly leaves scope for these kinds of differential updating (Plescia 2019). If one's preferred party does not get the most votes, it is still possible that it will enter into government, so believing in this possibility does not require maintaining a completely implausible position (Kunda 1990). And as Krizan and Windschitl (2009, 96) explain, 'a motivated thinker will arrive at a conclusion that he or she desires but only to the extent that he or she can construct a reasonable justification for it on the basis of available information'.

(ii) *Convergence*: Yet crucially, the 'motivated thinker' discussed above will not typically have a *better* justification for holding a desirable but incorrect belief in the aftermath of an uncertainty-reducing event than they had before that event. The nature of an uncertainty-reducing event is to narrow the bounds of so-called 'reality constraints' on beliefs (Kunda 1990), giving those beliefs less scope to diverge between groups. So arguably, uncertainty-reducing events are more likely to produce convergence, as tighter reality constraints force groups to come into closer agreement about what is likely to happen. This possibility is visualised in the central column of Figure 1. Here, whether the outcome is subsequently seen on average as more likely (top panel), less likely (bottom panel), or equally likely (middle panel), the reduction in aggregate uncertainty about this likelihood reduces the partisan gap in expectations. Effectively, it is the expectations of those for whom the new information was, in Bayesian terms, most 'surprising' (Kruglanski et al. 2020, 414) that are updated most sharply in the direction of the new information. However, in all cases,

those most supportive of the outcome continue to deem it more likely than those less supportive at T_1, meaning wishful thinking remains intact, but at a reduced level.

Multiparty elections generally mimic the pre-performance/post-performance feedback structure that characterises expectations formation in daily life, which typically reduces wishful thinking (Sweeny and Krizan 2013). For example, people tend to be over-optimistic about their marks on an upcoming exam but substantially more realistic after they have taken the exam, before receiving their marks (Shepperd et al. 1996). If extended to expectations about political outcomes, this logic would suggest that people's (over-)zealousness about their preferred party's chances will make way for expectations that more realistically reflect its electoral performance, leading to convergence in beliefs. Relatedly, psychologists have shown that wishful thinking about political outcomes tends to fade as polling day nears (Krizan and Sweeny 2013). These behaviours may constitute a response to a 'verifiability constraint' on motivated reasoning—the future possibility of expectations being disconfirmed—which encourages people to update their expectations in favour of accuracy (Krizan and Windschitl 2007).

(iii) *Parallelism*: Finally, recent work has made a strong case that beliefs tend neither to converge nor diverge in response to new information, but instead move in parallel (Carey et al. 2022; Coppock 2022; Guess and Coppock 2020). Prior to receiving new information, different groups' beliefs are generally marked by a gap, and that gap is still there after they receive it. If the information is persuasive, it tends to persuade everyone to an equal degree. Expectations of coalition formation could quite plausibly show the same pattern in response to uncertainty-reducing events. This possibility is visualised in the right-hand column of Figure 1. In all three of these cases, wishful thinking is just as prevalent at T_1 as it was at T_0, even if there is an aggregate increase (top row) or decrease (bottom row) in the perceived probability of the outcome.

As the middle panel shows, parallelism is consistent with no updating happening at all. This may be possible if an event or new information does very little to elucidate likely outcomes—as could even be the case with an election result, if the result exactly replicates polls published prior to the election, and everyone has full knowledge and trust of those polls.

Materials and Method

Participants

We conducted a two-wave panel survey around the 2021 German federal election (N = 2,019; W1 September 13-21, 2021; W2 October 4-13 2021). The survey sampling (provided by YouGov) implemented nationally representative quotas for gender, age, and region. Table S1 in the Supplementary Material provides an overview of the demographics of the sample. Respondents were paid a local fee for participating by YouGov. We obtained ethical approval for this study from a major UK University (blinded for review).

We also explore comparable data from the 2021 German Longitudinal Election Study Rolling Cross-Section (GLES). We include only those respondents who were interviewed both before and after the election, and whose post-election interview took place before the end of the fieldwork for our YouGov survey, on October 13 (N = 3,590).

Data Availability

We pre-registered our data collection and analysis plans on OSF (anonymized link: https://osf.io/gwutz/?view_only=03ac9d7daea64bcf944b8883b8c5267d). We will also share all data and code to replicate our analyses on OSF upon acceptance for publication.

Procedure

In the pre-election wave of our YouGov survey, we presented voters with a list of parties and asked them to select the combination of parties that they thought would form the governing coalition ("coalition prediction" below). Following the election, YouGov recontacted these respondents and asked them the same question. In this second survey wave, to elicit respondents' expectations over a number of potential coalitions, we also presented participants with six random coalition options and asked them to rate their likelihood ("coalition likelihoods" below). We report unweighted analyses in the main text and, in the Supplementary Material, show that

applying YouGov's weighting variables produces comparable results. All analyses control for respondents' gender, age, and education level.

Coalition prediction

We asked, 'Which parties do you think will be involved in a governing coalition?'. We presented the following response options: CDU/CSU, SPD, Greens, the Left, FDP, AfD, Other party, Don't know. Respondents could select as many parties from this list as they saw fit.

Below, we summarise these predictions and how their distribution changed between the two waves. We also regress each party's inclusion in predicted coalitions across both waves on respondents' pre-election feelings towards that party (plus demographic control variables), measured on a normalised seven-point scale in response to the question "To what extent do you experience negative or positive feelings when thinking about the following political parties?".[1]

We also conduct an equivalent, exploratory analysis of a comparable item in the GLES, which asked the same respondents before and after the election "Which parties do you think will actually form the government together after the federal election?"—an approach that was new to this iteration of the GLES. We take the same approach to summarising these predictions, and regress them as above on a normalised version of the eleven-point pre-election GLES item "Looking now at the political parties in detail, what do you think of the different parties in general?".

Coalition likelihoods

In the post-election wave, we asked respondents to rate each of six coalitions' likelihood of being formed using a 0-100 slider ranging from 'extremely unlikely' to 'extremely likely'. For every respondent, we presented three coalitions, chosen through uniform randomisation without

[1] Our pre-registered models also included party identification (PID) measures. Including PID produced a confusing negative estimate for the effect of PID which we believe to be induced by multicollinearity, so we excluded it for clarity. It is also possible, however, that this negative effect of PID on coalition expectations when controlling for feeling thermometer ratings could be driven by the higher levels of political knowledge held by committed partisans (Meffert et al. 2011).

replacement, from a "Shortlist" (see below) of likely coalitions, and three further coalitions not included on this "Shortlist", again randomly and uniformly assigned without replacement. This approach ensured we acquired a large number of assessments of coalitions deemed possible by the media, which appeared more frequently than options that were only mathematically, but not politically, possible. We generated the coalitions by identifying every possible combination of three parties who, combined, had a majority of seats in the Bundestag. Also included were the option of 'minority government' or a grand coalition of the two largest parties. We included every ordering of the parties within each coalition.

Below, we model the average likelihood assigned to each coalition, and the association between these likelihoods and a series of predictor variables. Our main focus is the average normalised *feeling* towards the parties in the coalition, measured at the individual level, summing the normalised seven-point feelings (see wording above) towards each of the parties in the coalition and dividing by the number of parties. We also control for a series of aggregate measures of the objective likelihood of each coalition being formed:

- An binary *shortlist* indicator of whether a given coalition option was a politically possible outcomes, based on active discussions in the media when we were designing the study (Emundts 2021). Seven coalition options are on this list: SPD, FDP and Greens; SPD and CDU; CDU and SPD; CDU, Greens, and FDP; SPD, CDU and FDP; SPD, CDU and Greens; SPD, Greens and FDP. Subsequent analyses have validated this list (Debus 2021). Three of the six coalitions that respondents saw were randomly selected from the list. Three of them were randomly selected from among the remaining 57 options.

- Betting *odds* in the form of trading prices from the platform *smarkets*. We take one price for each day that our surveys were in the field, and one day before and after. This market is designed such that the sum of prices of each option is 100. Larger prices closer to 100 mean an outcome is deemed more likely to occur. This item provides a relatively objective way of distinguishing the likelihood of the coalitions on our Shortlist of most likely coalitions—for all of which betting odds were available.

- The coalition's *total vote share*, summing the vote share of all parties in the coalition.

Results

Pre- and Post-Election Coalition Predictions

Table 1 documents the percentage of respondents before and after the election, in both our original YouGov survey and the GLES, expecting specific coalitions, among the top ten most commonly selected coalitions from the pre-election wave.[2] In our YouGov survey, all top ten coalitions respondents predicted prior to the election are either combinations that were recognised in the media as being sufficiently worthy of attention to earn them a convenient nickname based on the combination of party colours (e.g. "Jamaica", "Germany", "Kenya", "red-green") (Emundts 2021), a grand coalition of the two largest parties (SPD and CDU), or a single-party government of one of the three largest parties (SPD, CDU, or Greens). *SPD, Green, FDP* (the eventual governing coalition) was the most common response combination (10.90%). However, no single coalition seemed overwhelmingly likely. Even the most commonly predicted coalition was less frequent than respondents either saying "don't know" or selecting none of the parties, which was the most common outcome (14.81%). Overall, these patterns indicate a high degree of uncertainty about which government would be formed.

Post-election expectations exhibit much lower aggregate uncertainty. First, choosing none of the parties or saying "don't know" went from the most common response to the second-most common response, now representing fewer than 12% of responses. Second and more significantly, expectations now overwhelmingly favoured the "traffic light" coalition of *SPD, Green, FDP* that would eventually be formed, with around 61% of respondents deeming it the most likely. While just over one in four respondents report expectations for a non-traffic light coalition (27%), the percentage identifying any other individual coalition never exceeded 4% of respondents. The final column shows the change in these percentages from the pre-election wave. The perceived likelihood of every option other than the coalition that eventually formed government shrank. For *SPD, Green, FDP* meanwhile, the proportion of the sample predicting

[2] While voters in the region of Bavaria cannot vote for the CDU, but the CSU, the two parties act as one in coalition negotiations, so for convenience here and elsewhere we refer only to the CDU—though survey items mention the CSU where necessary.

this coalition increases by over 50 percentage points. Taken together, these patterns indicate that the election result substantially reduced uncertainty about the coalition outcome, but did not completely resolve that uncertainty.

Table 1: Top ten coalitions as predicted pre-election, sorted by change in percentage of sample selecting the coalition post-election

Coalition	Percentage pre-election	Percentage post-election	Change
YouGov Panel Survey			
SPD Green FDP	10.90	61.02	+50.12
SPD	4.90	3.37	-1.53
CDU Green FDP	4.36	2.48	-1.88
CDU	4.95	2.13	-2.82
Green	3.71	0.84	-2.87
SPD CDU FDP	5.50	1.14	-4.36
SPD CDU	6.24	1.68	-4.56
SPD Green	7.23	1.98	-5.25
SPD CDU Green	9.21	1.68	-7.53
SPD Green Left	9.86	1.78	-8.08
Total top 10	66.86	78.10	11.24
None chosen/DK	14.81	11.94	-2.87
GLES Rolling Survey			
SPD Green FDP	12.23	81.17	+68.94
SPD FDP	0.61	0.39	-0.22
SPD CDU Green FDP	1.42	0.22	-1.20
CDU FDP	2.67	0.14	-2.53
CDU Green FDP	8.72	3.82	-4.90
SPD Green Left	6.99	0.92	-6.07
SPD CDU FDP	8.44	0.78	-7.66
SPD Green	11.09	1.39	-9.70
CDU Green	10.22	0.11	-10.11
SPD CDU Green	11.45	1.17	-10.28
Total top 10	73.84	90.11	16.27
None chosen/DK	10.12	4.72	-5.40

Similar patterns are apparent in the GLES data, with the main difference being that post-election expectations moved even more convincingly in the direction of expecting the traffic light coalition, with fully 81% of respondents selecting this outcome in the post-election interview.

Wishful Thinking in Coalition Predictions

At the individual level, these shifts were connected to each voter's party preferences. Figure 2 plots predicted probabilities of selecting each party as part of the predicted coalition in each wave, by levels of prior warmth toward that party. Mimicking the findings in Table 1, respondents became more likely to include the SPD, Greens, and FDP in the eventual coalition. Conversely, they became less likely to include the CDU, the Left, or the AfD. In the Supplementary Material we show that in many cases these changes were larger among those with better election knowledge.

Those who liked the Greens and FDP the least revised their expectations the most dramatically in favour of their inclusion in the coalition, while those who liked these parties the most barely changed their already high expectations. With the CDU, Left, and AfD, we observe the converse pattern. Those who liked these parties the least only slightly decreased their already low expectations of their inclusion in the final coalition. Table 2 displays the association between feelings towards a party and predicting that party would be in the coalition. As these coefficients are drawn from models with exactly the same respondents, and the value of all predictor variables is constant across both instances, we can directly compare them. Heuristically, it is reasonable to treat cases in which the effect of party feelings shrinks such that the post-election confidence interval does not overlap with the pre-election confidence interval as instances of convergence. This happens for all parties except SPD and AfD. In no case does the effect increase significantly in the post-election context, which would indicate divergence. Yet, Table 2 also shows that the reduced effect remains statistically significant in the post-election wave for *every* party. Convergence, where it occurs, never fully overrides the influence of partisan preferences on expectations, leaving wishful thinking intact at a statistically significant, but reduced, level in the aftermath of the election.

Again, these findings are further reinforced when exploring the GLES, as shown in Figure 3 and the bottom half of Table 2. In this case though, convergence is clearly apparent for SPD, as well as for the CDU, FDP, Greens, and Left. Again, for every party, wishful thinking is apparent in

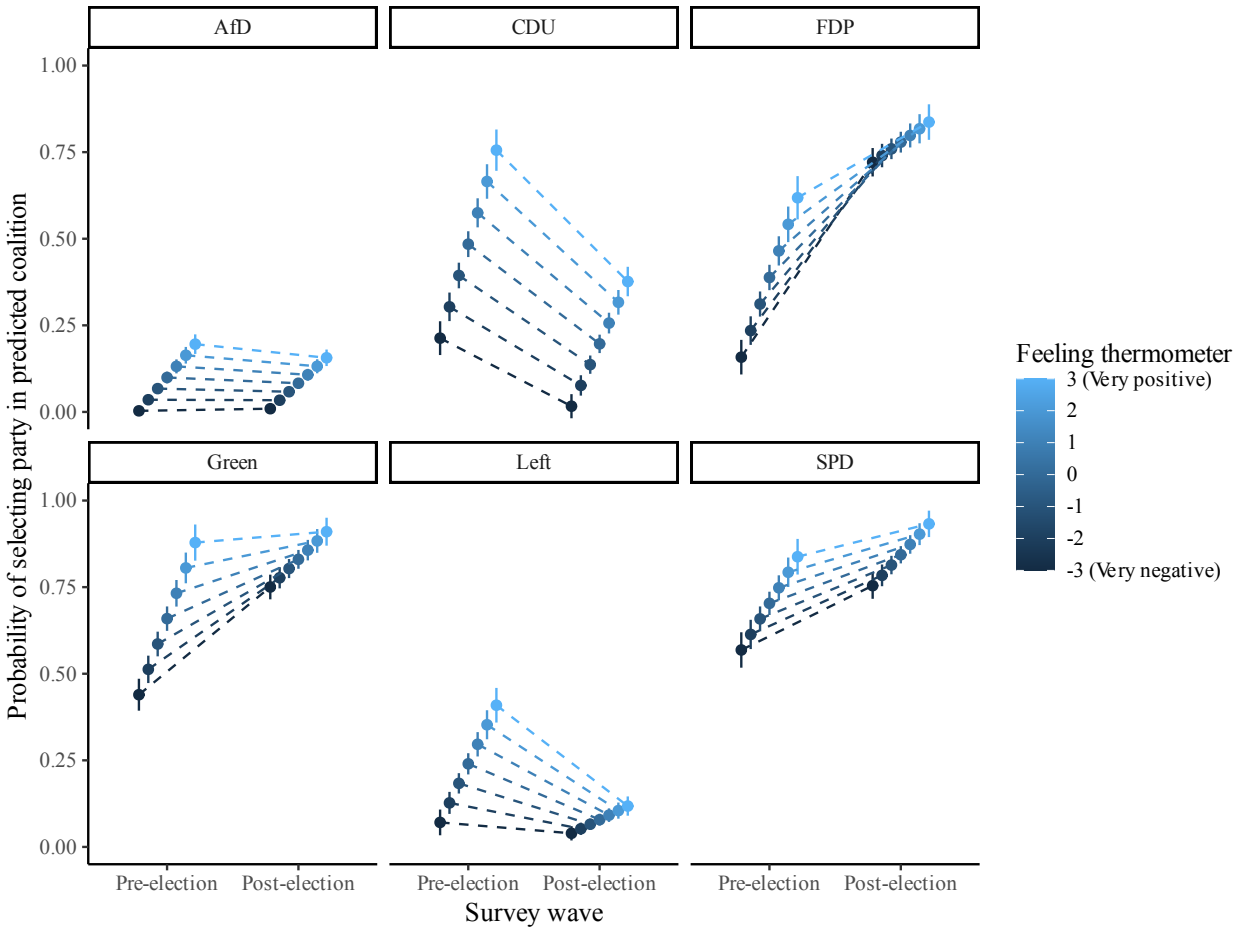
the post-election context even after such dramatic convergence of expectations ($p < .01$ for all parties, and $p < .001$ for four of six parties).

Post-Election Coalition Likelihoods

But is this post-election wishful thinking truly systematic? The analyses above only demonstrate that those more supportive of a party were more likely to include it in their predicted coalition, but how far does wishful thinking go? Does it pervade evaluations of the universe of possible coalitions? Figure 4 depicts the mean likelihood assigned to each randomly generated coalition presented to respondents in our post-election coalition likelihood item, collapsing together coalitions that contain the same parties but differing in lead and junior partner order—except in the case of the traffic light coalition, which we display with each possible senior partner. On average, respondents rated the eventual governing coalition (SPD, Greens, and FDP) as having over a 75/100 likelihood of being formed, assigning dramatically lower ratings to other coalitions. As the party that received the most votes, respondents correctly perceive an SPD-led "traffic light" coalition as more likely than Green- or FDP-led variations. When the coalition is presented as led by the either the Greens or FDP, they are still rated as more likely than any other coalition apart from an SPD-led "traffic light" coalition.[3] Another striking trend is that coalitions involving the AfD were consistently rated as the least likely to be formed, in line with the far right party's 'pariah status' (Faas and Klingelhöfer 2022) that saw other parties pledge not to work with the AfD.

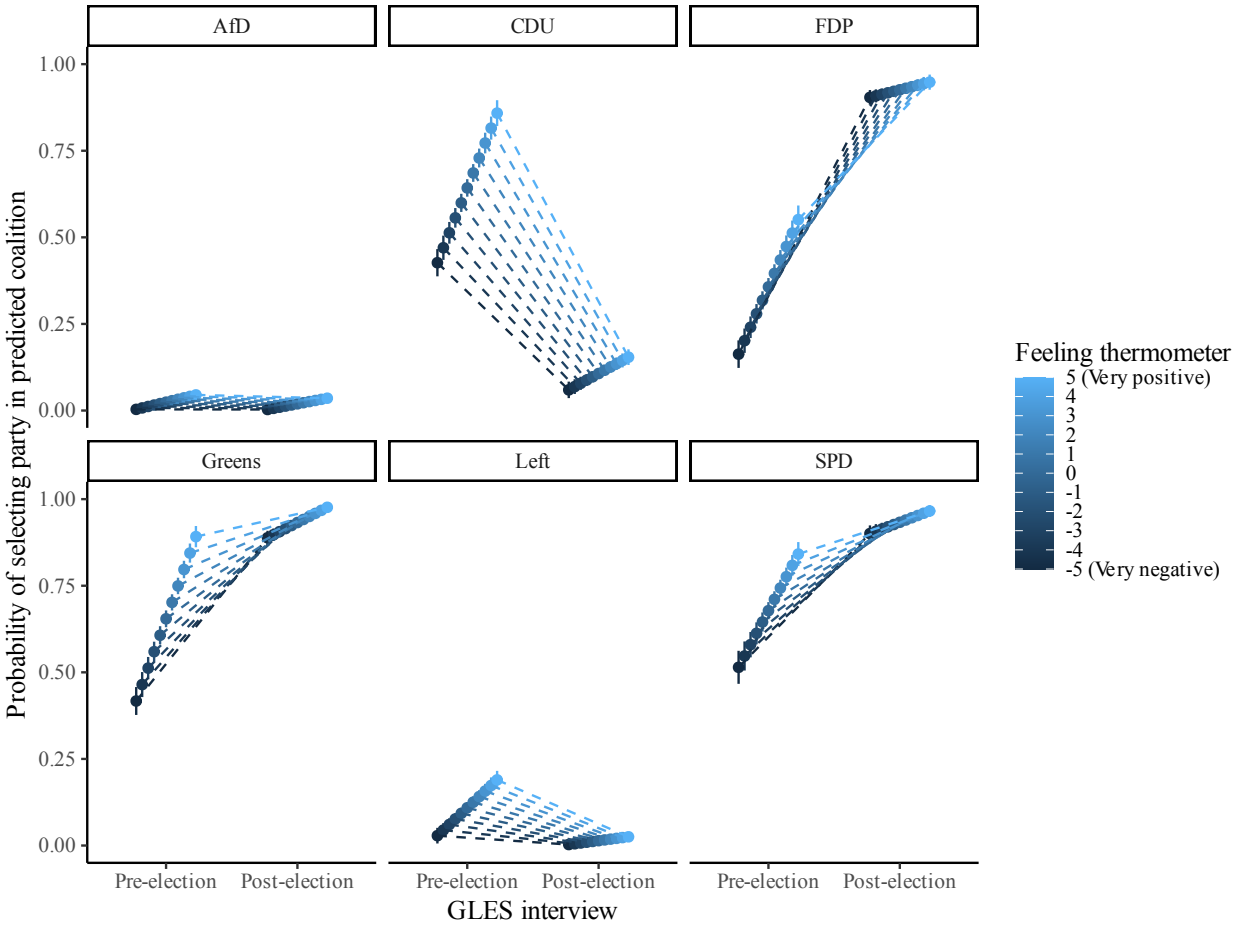
[3] We conducted an exploratory analysis, reported in the Supplementary Material, finding minimal association between party preference and the estimated likelihood of Green- or FDP-led traffic light coalitions as opposed to an SPD-led traffic light coalition. Respondents may have taken the opportunity to signal that they knew which parties would be in the coalition, even when they were incorrectly ordered.

Figure 2: Predicted probability of selecting parties in coalition, by wave and party feeling thermometer rating.



Note. Each panel plots the probability of predicting the named party will be in the governing coalition in each survey wave, at different levels of feelings towards the party. Vertical bars represent 95% confidence intervals. Plot points staggered horizontally for visual ease.

Figure 3: Predicted probability of selecting parties in coalition, by GLES interview timing and party feeling thermometer rating.



Note. Each panel plots the probability of predicting the named party will be in the governing coalition in each survey wave, at different levels of feelings towards the party. Vertical bars represent 95% confidence intervals. Plot points staggered horizontally for visual ease.

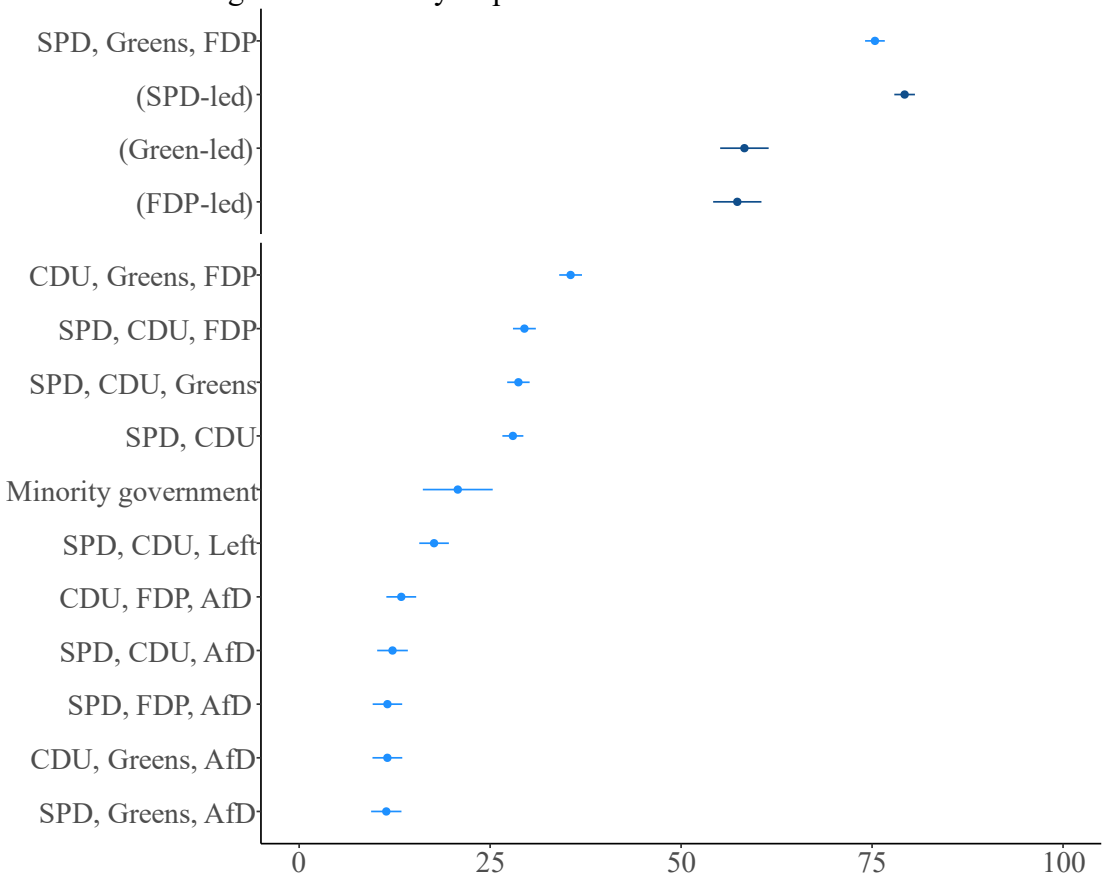
Table 2: Effect of party feelings on inclusion of each party in predicted coalition in. BH column contains p values with a Benjamini-Hochberg multiple comparisons correction.

Wave/Interview	Estimate	Standard error	p value	Confidence interval		BH
YouGov Panel Survey						
SPD						
Pre-election	0.269	0.039	<0.001	0.192	0.347	<0.001
Post-election	0.178	0.029	<0.001	0.121	0.236	<0.001
CDU						
Pre-election	0.543	0.041	<0.001	0.463	0.622	<0.001
Post-election	0.360	0.029	<0.001	0.303	0.417	<0.001
Greens						
Pre-election	0.439	0.035	<0.001	0.370	0.508	<0.001
Post-election	0.160	0.027	<0.001	0.106	0.213	<0.001
FDP						
Pre-election	0.460	0.044	<0.001	0.374	0.546	<0.001
Post-election	0.116	0.036	0.001	0.045	0.187	0.016
Left						
Pre-election	0.338	0.032	<0.001	0.275	0.402	<0.001
Post-election	0.079	0.018	<0.001	0.043	0.114	<0.001
AfD						
Pre-election	0.193	0.015	<0.001	0.163	0.222	<0.001
Post-election	0.147	0.013	<0.001	0.122	0.172	<0.001
GLES Rolling Survey						
SPD						
Pre-election	0.327	0.034	<0.001	0.260	0.394	<0.001
Post-election	0.065	0.017	<0.001	0.032	0.098	<0.001
CDU						
Pre-election	0.432	0.029	<0.001	0.374	0.489	<0.001
Post-election	0.094	0.018	<0.001	0.060	0.129	<0.001
Greens						
Pre-election	0.475	0.027	<0.001	0.422	0.527	<0.001
Post-election	0.088	0.013	<0.001	0.062	0.114	<0.001
FDP						
Pre-election	0.388	0.032	<0.001	0.326	0.451	<0.001
Post-election	0.044	0.017	0.009	0.011	0.077	0.009
Left						
Pre-election	0.161	0.019	<0.001	0.124	0.198	<0.001
Post-election	0.022	0.008	0.005	0.007	0.038	0.005
AfD						
Pre-election	0.042	0.006	<0.001	0.031	0.053	<0.001
Post-election	0.033	0.004	<0.001	0.024	0.041	<0.001

Wishful Thinking in Coalition Likelihoods

We examine the extent of wishful thinking on these subjective judgments after controlling for two objective measures of how likely different coalitions were. Looking at all coalitions, we control for the pre-registered shortlist indicator capturing which coalitions were treated as more likely by the media (Emundts 2021) ("All coalitions" in Table 3). Looking only at the shortlisted coalitions, we used betting odds of the likelihood of those coalitions to capture variance in the objective chance that each of these shortlisted coalitions would be formed ("Shortlist only" in Table 3; betting odds for other coalitions were not available). These indicators of "objective" likelihood are strong predictors of the subjective likelihoods. Regardless of the measure used, voters rated more plausible coalitions as significantly more likely. For example, going from the minimum to the maximum possible betting odds assigned to a given coalition is associated with expectations that are approximately 67/100 points higher.

Figure 4: Summary of perceived coalition likelihoods.



Note. Means and 95% confidence intervals of perceived likelihoods of each randomly presented coalition option, in post-election survey. We collapse together coalitions containing the same parties, but in different orders, for simplicity—except in the case of the traffic light coalition.

Table 3: Explaining variation in post-election coalition expectations.

	Coalition likelihood	
	(All coalitions)	(Shortlist only)
Objective likelihood indicators		
Shortlist	23.185***	
	(0.555)	
Odds		67.116***
		(0.972)
Vote share	-0.395***	0.164***
	(0.048)	(0.059)
Feeling thermometer		
Average party feeling	18.478***	10.560***
	(1.687)	(1.751)
Gender (baseline: Man)		
Woman	3.408***	2.926***
	(0.711)	(0.737)
Age category (baseline: 18-24)		
25-44	-4.658**	-2.451
	(1.811)	(1.878)
45-54	-9.087***	-6.190***
	(1.930)	(2.002)
55+	-11.112***	-8.361***
	(1.782)	(1.848)
Education (baseline: No university)		
University	-1.619**	-2.139***
	(0.794)	(0.823)
Intercept	39.940***	14.796***
	(3.177)	(3.904)
Num. IDs	1695	1695
sd(ID)	9.138	8.21
Num. Obs.	9994	5085

Note: p<0.1 (*), p<0.05 (**), p<0.01 (***)

However, there is also evidence of pervasive static wishful thinking. In both models in Table 3, coalitions that contained parties voters liked were seen as substantially more plausible. Among all coalitions, those who liked the parties in the coalition the most reported expectations approximately 18/100 points higher than those who most disliked the parties. This difference reduces to 11/100 points among the most plausible coalitions. So while overall voters subjectively agreed that those coalitions treated as objectively more likely are indeed more likely, net of this, their expectations were still marked by clear partisan preferences. Not only were people more likely to include parties in a single spontaneous coalition prediction the more they liked those parties, but such wishful thinking was systematic in evaluations of coalitions: the more people liked the parties in any given coalition, the more likely they thought it was to be formed.

Discussion

In recent years, public opinion research has paid attention to the extent to which political preferences moderate belief updating (Carey et al. 2022; Coppock 2022; Wood and Porter 2019) and whether this would necessarily indicate motivated reasoning (Druckman and McGrath 2019; Little 2025; Melnikoff and Strohminger 2024). Similarly, accounts of wishful thinking have often posited mechanisms that suggest party preferences moderate expectations updating (e.g. Barnfield 2023; Mongrain 2021; Rose and Aspiras 2020; Tikochinski and Babad 2023). On these accounts, *static* wishful thinking (a contemporaneous association between preferences and expectations) can be taken to imply from *dynamic* wishful thinking (change over time in expectations towards reflecting one's preferences). We advance these theoretical developments by showing a case of clear and significant static wishful thinking, despite reduced aggregate uncertainty, without any suggestion of large-scale dynamic wishful thinking.

Specifically, our results indicate that people's coalition expectations at the 2021 German federal election incorporate the strong informational cue provided by the election result itself, reducing uncertainty about possible coalition outcomes. Yet, within these narrower bounds of uncertainty we nonetheless still observe wishful thinking, albeit at reduced levels. The more one likes a party, the more likely one is to expect that party to be in government. Rather than diverging in spite of the evidence, coalition expectations mostly converge in line with the evidence, but remain significantly associated with people's own preferences. Those preferences continue to shape their spontaneous expectations of how likely it is that a given party will be in the eventual coalition and of how likely different possible configurations of parties are—whether considering all possible coalitions or only those deemed most objectively plausible. These findings caution against the temptation to interpret contemporaneous correlations between expectations and preferences (static wishful thinking) as evidence that these preferences biased interpretations of evidence when forming those expectations (dynamic wishful thinking). It is important to note, however, that our findings do not constitute evidence against motivated reasoning as a potential explanation of wishful thinking. Rather, they simply suggest that under this or any other account, we should not assume that static wishful thinking results from dynamic wishful thinking, at least

in the case of major uncertainty-reducing events. Equally, our findings do not show that individual-level (*un)certainty* about the likely coalition necessarily reduced in response to the election result. Rather, we show that individual expectations of different outcomes came to closer agreement across party lines when aggregate uncertainty about those outcomes reduced—those individuals might remain equally uncertain themselves about whether their own updated expectations.

Future research should assess whether these patterns hold for other kinds of uncertainty-reducing events, or other forms of information. An obvious example relevant to coalition expectations is the announcement of a major pre-electoral coalition pact—does this also cause expectations to converge? Do weaker coalition "signals" have a similar effect (see Bahnsen et al. 2020)? How do major shifts in the polls affect levels of wishful thinking (see Barnfield 2023)? Does the relative uncertainty of these informational cues, relative to election results, enable them to produce dynamic wishful thinking? Beyond the electoral arena, how do major democratic decisions (e.g. the UK's vote to leave the EU) affect wishful thinking about relevant outcomes (e.g. whether the UK would pursue a hard or soft Brexit)? Even further afield, how do significant geopolitical moments (e.g. a potential Ukraine ceasefire deal) affect wishful thinking about outcomes of global significance (e.g. the resolution of the Russo-Ukrainian War)? Addressing such questions, alongside continued conceptual and methodological debate on the distinctions between static and dynamic wishful thinking, motivated reasoning, and Bayesian information processing will enable our insights into expectations formation to fit into a deeper and broader theoretical account of belief formation.

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