SHORT ARTICLE

The Temporal Focus of Campaign Communication

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Experiences from the past and present influence decision-making. Voting behavior at elections also involves retrospective and prospective considerations. Yet, we do not know the degree to which parties react to these considerations by emphasizing the past, present, and future. I posit that parties do not only make promises but face incentives to discuss the past and present. I also expect that incumbency status conditions emotive rhetoric across these temporal dimensions. Using supervised machine learning, I uncover the temporal rhetorical focus in 621 party manifestos published in nine countries between 1949 and 2017. Parties devote, on average, half of a manifesto to future promises, while the other half describes the past and present. I also show that statements on the past and present drive previously observed differences in sentiment between incumbents and opposition parties. The findings underscore how the temporal dimension of campaign communication enhances our understanding of party competition.

Humans think about the past and present when making decisions or predicting the future. Moreover, the temporal focus of individuals can influence attitudes. For example, evidence from psychology suggests that people with a focus on the present show higher life satisfaction, whereas a future focus correlates with life achievements (Shipp and Aeon 2019). Recent research highlights that the perception of time also shapes political behavior. "Futureless" and "futured" tongues imply different time perceptions, which in turn affect the approval of future-oriented policies (Pérez and Tavits 2017). Other survey experiments suggest that nostalgic appeal increases conservative voters' support for liberal political positions (Lammers and Baldwin 2018).

Voting at elections also involves a time perspective. Citizens consider retrospective and prospective factors when casting their ballot for parties or candidates. Retrospective voting implies that voters choose between parties on the basis of past performance, the status quo, or economic developments (Key 1966; Weingast, Shepsle, and Johnson 1981). Prospective voting entails comparing the promises made by parties for the upcoming legislative cycle (e.g., Downs 1957; Mansbridge 2003). Political parties and politicians should face incentives to emphasize the past, present, and future strategically. Even though behavioral evidence and theories of voting behavior consider the importance of the temporal focus, surprisingly, we lack comparative evidence about the degree to which political parties and politicians emphasize the past, present, and future (for a single-country study, see Dolezal et al. [2018]).

This article tackles two open research questions. First, to what degree do parties emphasize the past, present, and future? Second, do incumbents and opposition parties apply different levels of emotive rhetoric across these time perspectives? I uncover the temporal focus of over 380,000 sentences from 621 party manifestos, drafted before 150 elections across nine countries between 1949 and 2017. Parties devote, on average, around half of their manifestos to the future, 10% to the past, and 40% to the present. I then demonstrate how distinguishing between the temporal focus reveals valuable insights in nonpositional aspects of party competition. Extending recent studies on emotive rhetoric (Crabtree et al. 2020; Kosmidis et al. 2019), I show that most of the difference in sentiment between incumbents and opposition parties derives from the rhetorical

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strategies in statements on the past and present. These findings have important implications for studying party competition and election campaigns.

PREVIOUS RESEARCH AND EXPECTATIONS

The existing literature analyzed campaign communication mainly in terms of salience and positions. Recent studies have examined parties' nonpositional communication as a third dimension. Examples include emotive language (Crabtree et al. 2020; Kosmidis et al. 2019), concreteness (Eichorst and Lin 2019), and moral rhetoric (Jung 2020). This article introduces the temporal focus as a fourth dimension of campaign communication, a dimension that despite its intuitive nature is conspicuously absent from the analysis of political communication of parties. Since humans base their decisions on the past and the present and because parties might try to implement policy right before an upcoming election (e.g., Shipp and Aeon 2019; Weingast et al. 1981), I consider the past and present as retrospective communication and necessary shortcuts for retrospective voting. Future-related statements are treated as prospective communication. Yet, the analysis explicitly distinguishes between the three time periods instead of merging the past and present into a single "retrospective" group.

Political parties have different incentives to focus on different time points. Some parties focus on past or present performance. Other parties might want voters to forget about past blunders and focus the minds of voters on the future. Government status should condition emotive rhetoric. Incumbents try to claim credit for past achievements, given that most citizens do not believe that parties keep their promises and because media outlets focus much more on broken promises (Müller 2020). Incumbents are also more likely to be positive in their depiction of the past and present because they want to maintain the status quo. Opposition parties want to change the status quo and must, by default, be against it (Geer and Vavreck 2014). As a result, the opposition faces incentives to blame the government (Dolezal et al. 2018; Traber, Schoonvelde, and Schumacher 2020; Weaver 1986). Turning to future-related statements, voters expect parties to outline what they intend to preserve or change in the future (Mansbridge 2003). Therefore, incumbents and nonincumbents should engage extensively in the discussion of campaign pledges and desired policy outcomes.

I posit that the temporal direction of statements drives differences in emotive rhetoric between incumbents and the opposition. Emotive rhetoric, often measured through positive and negative sentiment, serves as a useful proxy of credit claiming and blame attribution (e.g., Traber et al. 2020). Parties should express different levels of sentiment across the three temporal perspectives. On the one hand, in statements on the past and present, the opposition can attribute blame, whereas incumbents praise achievements and the status quo. As Geer and Vavreck (2014, 219) emphasize, "the party out of power has to provide reasons for why those in power need to be replaced. Those reasons (along with attempts to 'set the record straight') usually come in the form of attacks." These attacks should occur in sentences on the past and present since the incumbent can be held responsible for past actions and the status quo. On the other hand, all parties, irrespective of their incumbency status, face incentives to describe the future in positive terms. To be clear, some opposition parties might pursue "prospective attacks" by highlighting the negative consequences if the incumbent remains in power. However, drafting "doomsday" manifestos is generally not a vote-maximizing strategy for parties. Using these considerations, I formulate a testable hypothesis:

> **H1.** Incumbents express more positive levels of sentiment than opposition parties when addressing the past and present but not necessarily when addressing the future.

DATA AND MEASUREMENT

Party manifestos contain officially stated positions and are therefore suitable as a proxy of parties' campaign communication. Manifestos are drafted in a lengthy process, involve the central actors in each party, and are relevant documents to uncover the temporal dimension of campaign communication. Since previous studies on emotive rhetoric also rely on party manifestos (Crabtree et al. 2020; Dolezal et al. 2018; Jung 2020; Kosmidis et al. 2019), the results of this study allow for a direct comparison with existing findings.

I leverage human coding of statements about the past, present, and future using supervised machine learning. I train and validate a Support Vector Machine (SVM), a Multilayer Perceptron Network, and a Naive Bayes Classifier using a new hand-coded data set of sentences from party manifestos. I classify all machine-readable English and German manifestos provided in the Manifesto Corpus (Krause et al. 2019; Merz, Regel, and Lewandowski 2016). The sample includes 621 manifestos from Austria, Australia, Canada, Ireland, Germany, New Zealand, the United Kingdom, and the United States.[1] The three classifiers perform very similarly and produce virtually identical

1. More recent manifestos are usually segmented into quasi sentences. The remaining manifestos from the sample are available on the level of natural sentences (Däubler et al. 2012; Merz et al. 2016). Using sentence-level estimates or the proportion of words does not change the results (fig. A17). I keep only natural sentences and quasi sentences that contain at least four words and one verb (identified by part-of-speech taggers). I used the quanteda and quanteda.textmodels R packages (Benoit et al. 2018) to conduct the classification and quantitative text analysis.

results on the aggregated level. The SVM offers the best compromise between classification performance and computational efficiency.

For the construction of the English classifier, I instructed crowd coders and research assistants to label sentences from party manifestos (Benoit et al. 2016). For the German classifier, I use the human-annotated manifestos from the Austrian National Election Study, which divides up sentences into the past, present, and future (Müller et al. 2017). Overall, the annotated sample consists of 5,858 English and 12,084 German sentences. Statements are coded in terms of the temporal direction, not necessarily based on their grammatical tense. For instance, the statement "Increase funding for postsecondary education with more flexibility in educational models to ease the bridge between school and work" is labeled as "future" by the human coders and the classifier even though the sentence does not contain a verb in the future tense.

I validated the supervised classification in four ways. First, I perform a 4-fold cross-validation to assess the model performance (Neunhoeffer and Sternberg 2019). The F1 scores of the SVM range between 0.55 (German, past) and 0.82 (English, future). Second, I assess whether aggregated proportions of past, present, and future in manifestos correspond to the human coding of the same set of sentences. The supervised classification and human coding lead to very similar proportions of emphasis on the past, present, and future ($r > 0.92$). Third, I report the English and German words that are most unique to each of the three classes. The resulting terms indeed relate to the past (e.g., has, been, last, years), present (e.g., is, are, believe, now), and future (e.g., will, ensure, continue, increase). Finally, I filter sentences with the highest probabilities for a given class and also provide a random sample of sentences along with their predicted class. Appendix section C (the appendix is available online) presents the validation in detail.

DESCRIPTIVE EVIDENCE OF THE TEMPORAL FOCUS OF CAMPAIGN COMMUNICATION

To what degree do parties emphasize different temporal perspectives? Across the sample of 621 party manifestos, on average, 54% of sentences relate to the future, 37% focus on the present, and 9% describe the past. These proportions deviate within each class of statements and across countries (fig. 1). The box plots suggest that incumbents tend to focus somewhat more on the past than nonincumbents. Linear regression models with the focus on the past, present, and future as dependent variables confirm this descriptive evidence. Incumbent parties' average emphasis on the past exceeds the focus on the past by opposition parties by around 5 percentage points, which corresponds to 72% of the standard deviation of the share of statements on the past. Appendix section D summarizes the variation in temporal rhetoric over time and for different party families. Overall, the descriptive evidence highlights substantial differences in the temporal focus across parties and countries.

THE TEMPORAL FOCUS AND SENTIMENT

Having summarized the variation in temporal emphasis in party manifestos, I next analyze whether sentiment in campaign communication—a measure of credit claiming and blame attribution—depends on the incumbency status and the temporal direction of a statement. I run linear regressions with the

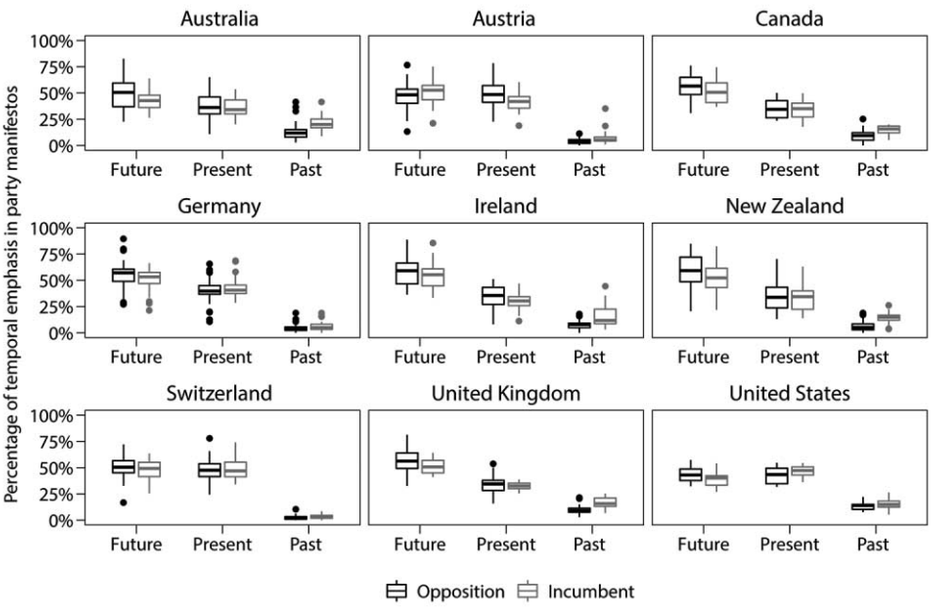

Figure 1. Emphasis on the past, present, and future, conditional on incumbency status

aggregated sentiment score as the dependent variable and inspect the interaction effect between the temporal focus and incumbency status. The models include robust standard errors clustered by manifesto and country fixed effects. The primary analysis uses the English and German versions of the Linguistic Inquiry and Word Count (LIWC) sentiment dictionary (Tausczik and Pennebaker 2010). I measure sentiment in statements on the past, present, and future in each manifesto as the count of positive minus negative terms, divided by the total number of words multiplied by 100 (Crabtree et al. 2020). Theoretically, sentiment can range from −100 (only negative words) to +100 (only positive words). The observed manifesto-level sentiment ranges from a minimum of −1.07 to a maximum of 7.69 (with a mean of 2.6). The choice of control variables corresponds to the selection by Crabtree et al. (2020). The models control for the left-right position (RILE and RILE^2), include a dummy that indicates whether a party is a socialist or nationalist party, add the year as a continuous variable, and control for the state of the economy (GDP growth, Unemployment, or Inflation). Economic variables are lagged by one year.

Figure 2*A* plots the fitted/expected values for the interaction between a binary measure of incumbency status (opposition/incumbent) and the temporal focus (past/present/future). In sentences on the future, incumbents and opposition parties seem to express similar levels of sentiment. We observe considerably larger differences in the other two time perspectives. Incumbents and opposition parties differ most strongly in sentences on the past. These results persist with a more fine-grained conceptualization of incumbency (fig. A18). Parties not represented in parliament before an election are most negative in their assessment of the past, followed by opposition parties that held at least one seat before an election.

Next, I assess whether the differences between incumbents and opposition parties are not only substantively but also significantly different. I follow the recommendations by King, Tomz, and Wittenberg (2000) and estimate the first difference in sentiment between government and opposition parties, separately for statements about each time perspective. More precisely, I calculate the differences in simulated expected values at specified values (in this case, "switching" from government to opposition in statements on the past, present, and future). Figure 2*B* shows the first difference estimates for 1,000 simulations for each time perspective, along with density curves and averages (*vertical solid lines*). A value above 0 implies that incumbents employ more positive sentiment than opposition parties in a given class. On the one hand, all simulated first differences between incumbents and opposition parties exceed 0 for statements on the past and present, implying that incumbents employ more positive sentiment than the opposition. In 97% of the simulations, the first difference between incumbents and opposition parties is also positive for statements about the future. On the other hand, the substantive effects vary markedly. The average first difference between incumbents and the opposition for statements on the past (1.09) is over four times larger than the first difference in statements on the future (0.25). These results underscore that sentiment between incumbents and opposition parties differs much more in statements on the past and present, which refines previous conclusions about parties' emotive rhetoric (Crabtree et al. 2020; Kosmidis et al. 2019).

I conducted several robustness tests (app. sec. E). First, all findings are robust toward various model specifications, fixed effects or random effects models, and the inclusion or exclusion of control variables. Second, results stay the same

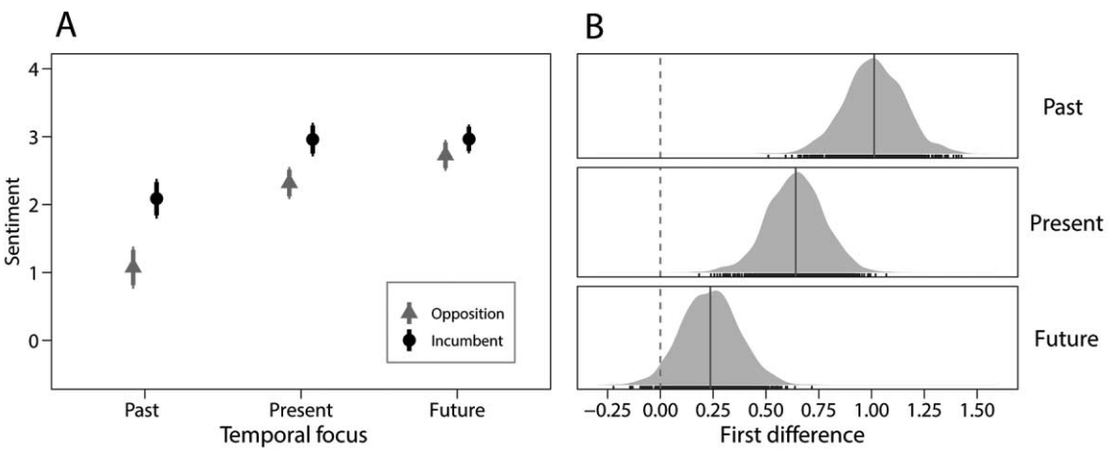

Figure 2. Incumbency status as a predictor of sentiment across different time perspectives. *A*, Expected values of sentiment calculated using the coefficients from model 1 in table A13. Higher values imply more positive sentiment. Error bars indicate 90% (*thick line*) and 95% (*thin line*) confidence intervals. *B*, Distributions of first difference estimates between incumbents and opposition parties for statements about the past, present, and future (based on 1,000 simulations for each time perspective).

when using different dictionaries (Proksch et al. 2019; Rauh 2018; Young and Soroka 2012), an alternative aggregation of sentiment, or a continuous measure of prospective rhetoric. Third, a jackknife-like procedure highlights that no single country drives the results.

Finally, I provide evidence that the patterns observed in party manifestos also occur in other channels of party communication (app. sec. F). First, I replicate a previous study on sentiment in parliamentary debates in Ireland (Herzog and Benoit 2015; Proksch et al. 2019). All politicians focus extensively on the past and present. On average, politicians from the government and opposition devote 20% of statements to the past and around 35% of statements to the present. Second, I analyze the 2013 televised leaders' debate in Germany using a human-coded content analysis of the temporal focus and sentiment (Boussalis et al. 2021; Rattinger et al. 2018). Chancellor Angela Merkel and her opponent Peer Steinbrück devoted over 20% of their statements to the past and around 30% to the present, which largely corresponds to the degree of retrospective rhetoric in manifestos. In both case studies, the difference in sentiment between the incumbent and the opposition is largest in statements on the past, which aligns with the analysis of party manifestos.

DISCUSSION AND CONCLUSION

This article offers the first comparative study of the temporal focus of campaign communication. The results underscore that campaign communication cannot be treated as purely prospective. Extending the studies by Crabtree et al. (2020) and Kosmidis et al. (2019) highlights the importance of distinguishing between the temporal direction of statements. Incumbents and opposition parties seem to react to retrospective voting by deliberately claiming credit or attributing blame when describing the past and present.

The high share of statements on the present and the much larger emotive difference in statements on the past strongly suggests that future research should pay more attention to the temporal dimension of campaign rhetoric. The results of this article provide exciting avenues for future research: Do politicians try to frame the past and present even more positively—or rather neglect retrospective assessments entirely—when public support is low or the economy performs poorly? When do parties employ nostalgic rhetoric to convince voters of (unpopular) policies? And do latent party positions and issue emphasis differ in purely retrospective and prospective sections? Answers to these questions will further improve our understanding of the temporal rhetorical dimension of party competition.

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The Temporal Focus of Campaign Communication

Supporting Information

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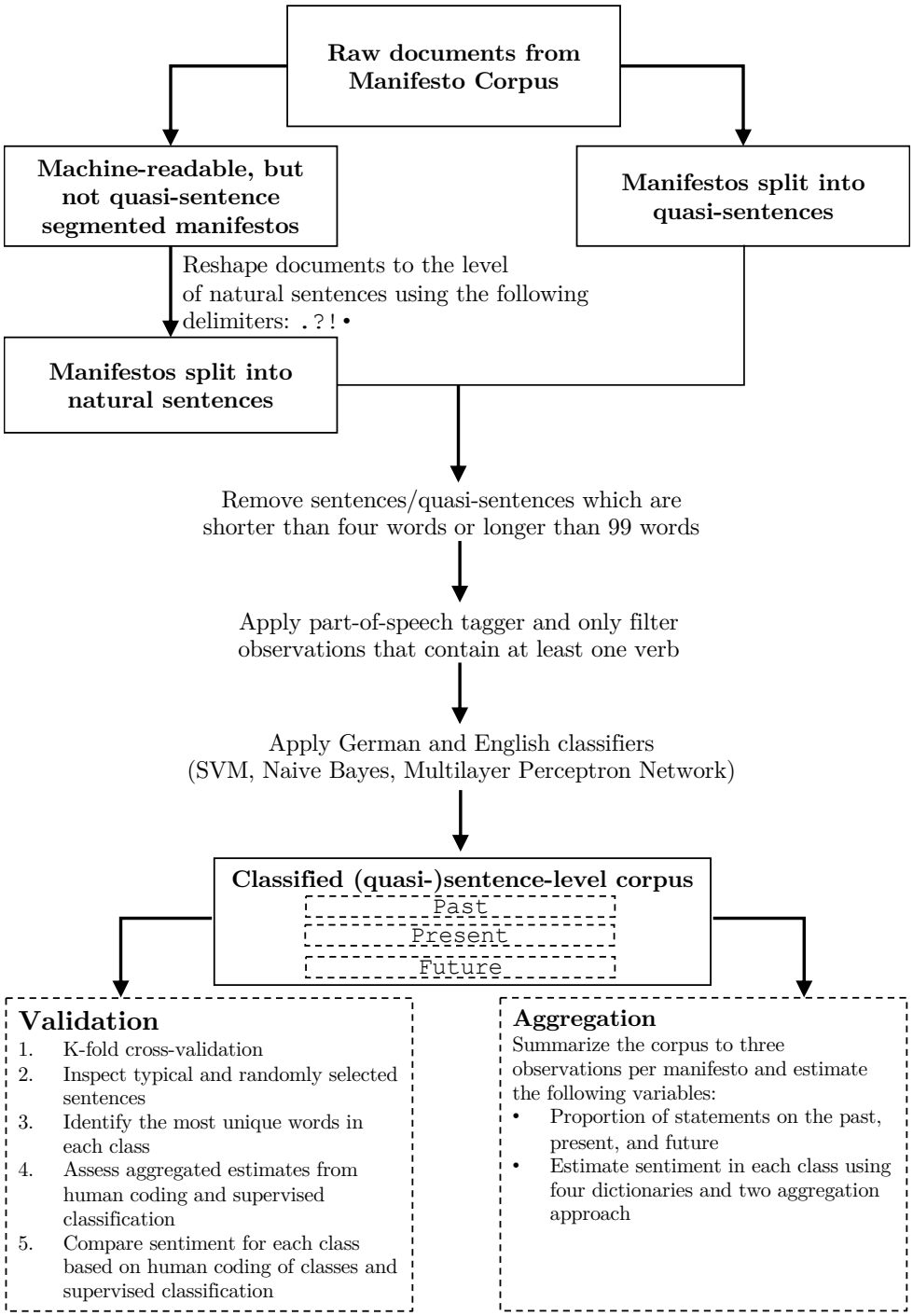
A Data Retrieval and Workflow

This section describes the data retrieval, classification, and validation in detail. Figure A1 provides an overview of the procedure which is described below and in the following sections.

Figure A1: Workflow



The party manifestos used in the paper were retrieved through the `manifestoR` R package (Merz, Regel, and Lewandowski 2016) which provides an API to all machine-readable party

manifestos that have been collected by the Manifesto Project (MARPOR/CMP) (Krause et al. 2019). A subset of these manifestos is not only machine readable, but also separated into quasi-sentences and annotated in terms of the policy areas from the CMP coding scheme (for more details see Merz, Regel, and Lewandowski 2016). If a manifesto is available on the level of quasi-sentences, I use quasi-sentences as the unit of analysis. If the manifesto is only available in machine readable form, I segmented the text to the level of natural sentences.[1]

In order to reduce the number of incorrectly segmented sentences, I only keep sentences that consist of at least four words (punctuation characters are not counted as a word) and contain at least one verb. To detect verbs, I used the `spacyr` package, an `R` wrapper for the `spaCy` "industrial strength natural language processing" Python library.[2] I apply the English and German universal dependency POS tagsets[3] and only keep sentences which contain at least one token that has been tagged as `VERB`. Removing observations without a verb, reduces the corpus by approximately 11%. Adding this additional filter seems appropriate since verbs are a necessary condition for a statement relating to either the past, present, or future. Lastly, I remove 262 sentences consisting of more than 100 tokens, which reduces the sample by only 0.06%. Including these very long sentences which are a result of missing punctuation does not change any of the results. The final corpus contains 384,095 sentences from 621 party manifestos. 51% of the final corpus (195,877 observations) are quasi-sentence annotated. Figure A2 shows the number of manifestos per country, the available time span, and the proportions of manifestos that are segmented into natural sentences and into quasi-sentences. Note that some of the regression analyses reduce the sample of manifestos since the economic indicators are not available for the entire period of investigation (Crabtree et al. (2020) face the same problem). Keeping only manifestos that could be matched with the economic indicators does not change results (see for instance Models 1 and 2 of Table A12 on page 32).

One potential issue of aggregating proportions of sentences, rather than the number of prospective and retrospective words, could be that sentences about the future are more likely to contain bullet points, whereas statements about the past and present are more wordy and

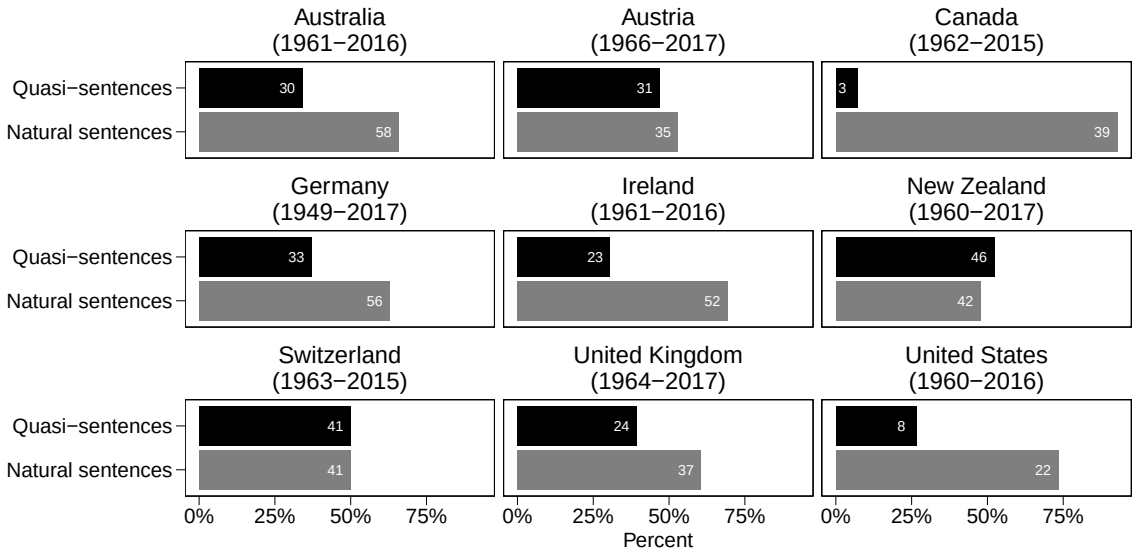
[1] For the segmentation into sentences, I use the function `corpus_segment()` from the `quanteda` `R` package (Benoit et al. 2018). I select the following punctuation characters as delimiters: `.?!•`.

[2] https://spacy.io.

[3] https://universaldependencies.org/u/pos/.

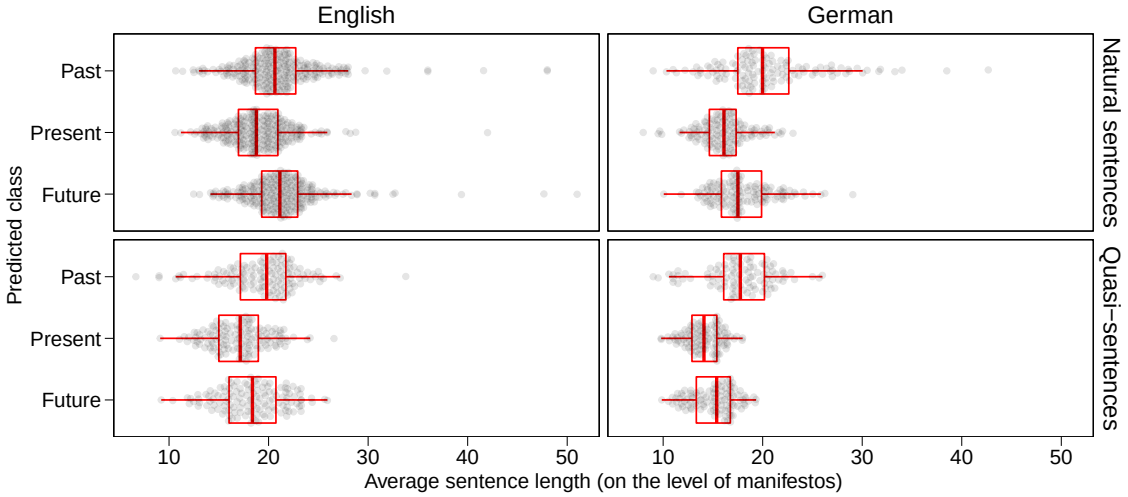
elaborate.[4] In order to test for this possibility, I calculate the average sentences length of sentences on the past, present, and future in each manifesto. Each dot in Figure Figure A3 marks the average sentences length across one class in a manifesto, the boxplots indicate the median values and interquartile ranges. Importantly, statements on the future do not appear to be systematically shorter than sentences on the past and present.

Figure A2: The number and proportions of available manifestos on the level of natural sentences and quasi-sentences



Note: The white numbers in each bar show the absolute number of manifestos, the bars show the proportions of quasi-sentence annotated manifestos and manifestos that have been segmented into natural sentences for each country.

Figure A3: The average length of natural sentences and quasi-sentences in each class and manifesto



[4] I thank one of the anonymous reviewers for raising this point.

B Description of Annotated Data

B.1 German Annotated Data

The German classifier was trained and validated based on human codings of Austrian party manifestos. The Austrian National Election Study[5] contains hand-coded party manifestos from the national elections in 2002, 2006, 2008, and 2013. The original datasets contain some of the sentences more than once because sentence are further disagreggated into a subject-predicate-object structure which allows to extract more than one statement from a natural sentence. However, the temporal direction of almost all sentences is the same for all subunits of a sentence. These datasets allow for constructing a German text corpus of 12,084 unique sentences.

B.2 English Annotated Data

Since comparable data for English party communication does not exist, I opted for crowd sourced text coding. The English classifier is trained on a new set of human coded sentences from party manifestos. Overall, 2,158 sentences have been coded by crowd workers, and an additional 3,700 sentences have been coded by Research Assistants. The first coding round was executed by crowd workers (see details below). In order to further improve the reliability, in an additional coding round two Research Assistants labeled a set of 4,500 English sentences. 3,700 of these statements could be coded in terms of their grammatical temporal direction (most of the uncodable sentences were short quasi-sentences without a verb). The following subsection describes the coding process for the crowd coding. SI Sections G.1 and G.2 report the instructions for the crowd workers and the Research Assistants.

Crowd workers were recruited and data are collected on the online platform CrowdFlower (renamed to Figure Eight in 2018). Workers are required to code strictly according to the instructions, not based on their personal definition of an election pledge. Afterwards, workers need to answer four out of five questions correctly. Having passed this quiz, respondents code randomly selected sentences from the text corpus in groups of five questions. The coding process works as follows: Contributors must decide whether a statement contains a testable

[5] https://www.autnes.at.

election pledge, or whether it relates to the past, present, or the future (SI Section G.1). If a sentence contains more than one temporal dimension, the respondent should mark the statement as ambiguous and select a second tense category. Based on the recommendations by Benoit et al. (2016), each statement is coded by at least five 'trusted' crowd workers who had an accuracy of at least 80% correctly answered test questions. For the training set, I only selected sentences that were coded in the same way – in terms of the temporal focus – by at least four out of five crowd workers (which corresponds to 83% of all coded sentences).

Crowd sourced text analysis requires test questions (also called gold tasks) as a control system to remove 'spammers' (Benoit et al. 2016). For these test questions, the 'answer key' (how the statement should be coded correctly) is specified in advance. 20% of all sentences are test questions occurring at a random position in each block of five statements to be evaluated. As test questions I selected a sample of statements from a reliability test of the 2002 Fianna Fáil manifesto and the 2008 manifesto of the Conservative Party of Canada that were coded identically by the nine expert coders from the Comparative Party Pledges Group. I also added 11 'screeners' to the test questions. Screeners are sentences with exact instruction how to code a statement (surrounded by two actual manifesto sentences).[6] Screeners are an additional mechanism to ensure that respondents pay attention. Workers need to answer 80% of the test/screener questions correctly throughout the job – a benchmark based on existing studies (Benoit et al. 2016). As the workers' country of origin I chose English speaking countries (United Kingdom, United States, Ireland, Canada, Australia, New Zealand). Participants needed to have completed at least 100 test questions in previous jobs and have had an overall of 80% correctly answered test questions throughout their prior coding jobs.

[6]For example: "Code this sentence as a Pledge with a Preciseness of 7, a Scope of 6 and Easy."

C Validation of Classification and Aggregated Estimates

This section contains extensive descriptions of the validations conducted to assess the quality of the supervised classification, reports unique terms and typical sentences from each class, and compares whether the aggregated measures of interest differ when using human coding or supervised classification.

C.1 Out-of-sample Predictions using K-Fold Cross-Validation

Validation is essential when working with supervised or unsupervised quantitative text analysis. First, I conduct k-fold cross-validations for the English and German corpora, and report precision, recall, and the F1 score for the out-of-sample prediction (Neunhoeffer and Sternberg 2019). Precision is measured as $\frac{TP}{TP+FP}$, where TP are the number of 'true positives' and FP 'false positives'. Recall divides the 'false positives' by the sum of 'true positives' and 'false negatives' ($\frac{TP}{TP+FN}$). The F1 score is a harmonic mean of precision and recall ($2 \times \frac{Precision \times Recall}{Precision+Recall}$). I opt for a 4-fold cross-validation which uses three quarters of the corpus as a training set for the classifier. The held-out quarter of observation is used as the test set.[7] This validation approach ensures that all sentences appear at least once in the held-out test set.

I use three bag-of-words classifiers (Naive Bayes, Support Vector Machine, and a Multilayer Perceptron Network with a single hidden layer network with two layers) to test for differences between classifiers. Figures A4 and A5 precision, recall and the F1 score for each classifier and class. The points indicate the average value across the four runs, the error bars show the minimum and maximum score. Turning to the English classification (Figure A4), we observe very similar scores for precision, recall, and F1 for the classification into future and present. Usually, the values range between 0.7 and 0.9. The classification of statements about the past works less reliability, given that the class does not appear as frequently as sentences on the present or future. Precision and recall are not diverging drastically which suggests that the classification does not suffer from systematic measurement error.

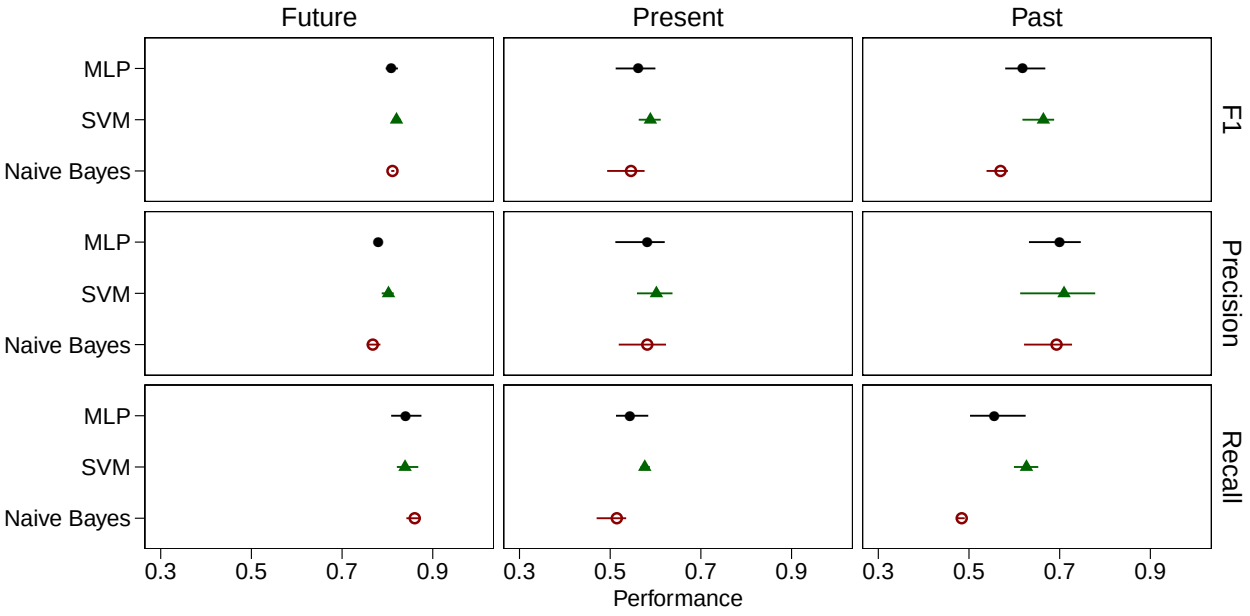
Turning to the German texts, we observe similar patterns. Precision, recall, and F1 scores

[7] Note that the terms '(held-out) test set' and 'out-of-sample prediction' imply the same approach. The Machine Learning literature usually distinguishes between the 'training set' which are the observations used to train the classifier and the 'test set' which are the remaining coded observations. These observations are not included in the training set (and therefore 'held-out') to perform an out-of-sample prediction.

the future range above 0.8. Scores for the statements on the present are lower (around 0.5), whereas the classification into the past works slightly better. Overall, the three classifiers perform quite similarly across the two languages and three classes. Because Naive Bayes does not perform as well when classes are imbalanced, I opted for the SVM which provides the best compromise between performance and computational efficiency.

Tables A1 and A2 provide confusion matrices of the classification into past, present, and future. In both cases, I train a SVM classifier on 70% of the sentences from the annotated sample and predict the class of the remaining sentences (30% of the sample). The training sets contain 4,101 (English) and 8,459 (German) sentences. The remaining 1,757 (English) and 3,625 (German) sentences are used as the test set for the out-of-sample prediction. Although we certainly observe misclassification on the level of sentences in both languages, the classification errors appear to be unsystematic.

Figure A4: 4-fold cross-validation of the English classification of statements into past, present, and future

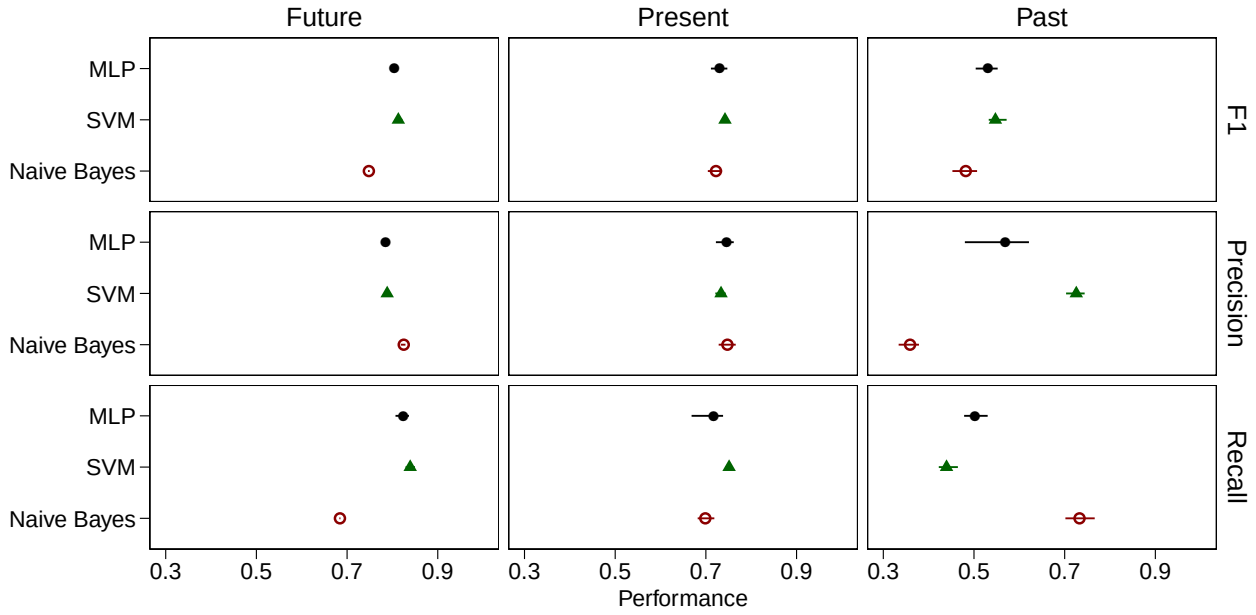


Note: Points show the average value across the four runs, the errorbars indicate the minimum and maximum values.

Table A1: Confusion matrix (English, SVM)

	Future	Past	Present
Predicted: Future	881	52	155
Predicted: Past	30	165	29
Predicted: Present	145	36	264

Figure A5: 4-fold cross-validation of the German classification of statements into past, present, and future



Note: Points show the average value across the four runs, the errorbars indicate the minimum and maximum values.

Table A2: Confusion matrix (German, SVM)

	Future	Past	Present
Predicted: Future	1635	135	280
Predicted: Past	13	156	30
Predicted: Present	269	114	993

C.2 Assessing Aggregated Estimates From Human Coding and Supervised Classification

I assess the similarity of the aggregated estimated of interest between an out-of-sample prediction and human coding of the same sentences. I randomly sample 5,000 sentences from the corpus of annotated sentences from Austria. These sentences are used to classify a Naive Bayes classifier, a Support Vector Machine (SVM), and a Multilayer Perceptron Network (MLP). Having trained the classifiers, I predict the class of remaining 7,084 sentences that are not considered in the training set. Figure A6 compares the aggregated proportions of each class in each sample of manifesto statements from the 7,084 sentences. Correlations between the proportions based on human coding and the classification exceed 0.92 for all three classifiers. The aggregated proportions closely correspond to human coding.

Next, I apply the German LIWC dictionary to each sentence to estimate the sentiment of a sentence, using the formula applied in Crabtree et al. (2020). Afterwards, I estimate the

average sentiment in each class, along with 95% bootstrapped confidence intervals to account for uncertainty and differences in sample sizes of each class. Figure A7 plots the estimated aggregated sentiment in each class for the three classifiers and the human coding of the same sentences. Results are very encouraging. The point estimates and confidence intervals across the classifiers are almost identical. Only for sentiment in sentences on the past the Naive Bayes classifier has much larger confidence intervals. This is because Naive Bayes usually performs worse when classes are imbalanced. Beyond the satisfactory values of precision, recall, and F1 for each class and both languages (SI Section C.1), these validation exercises underscores that the *aggregated* estimates mirror human coding almost perfectly. To be clear, the results of these two exercises are again based on out-of-sample predictions, meaning that the sentences from the training set are not considered in the test set.

Figure A6: Comparison of aggregated class proportions in the held-out test set based on human coding and supervised classification

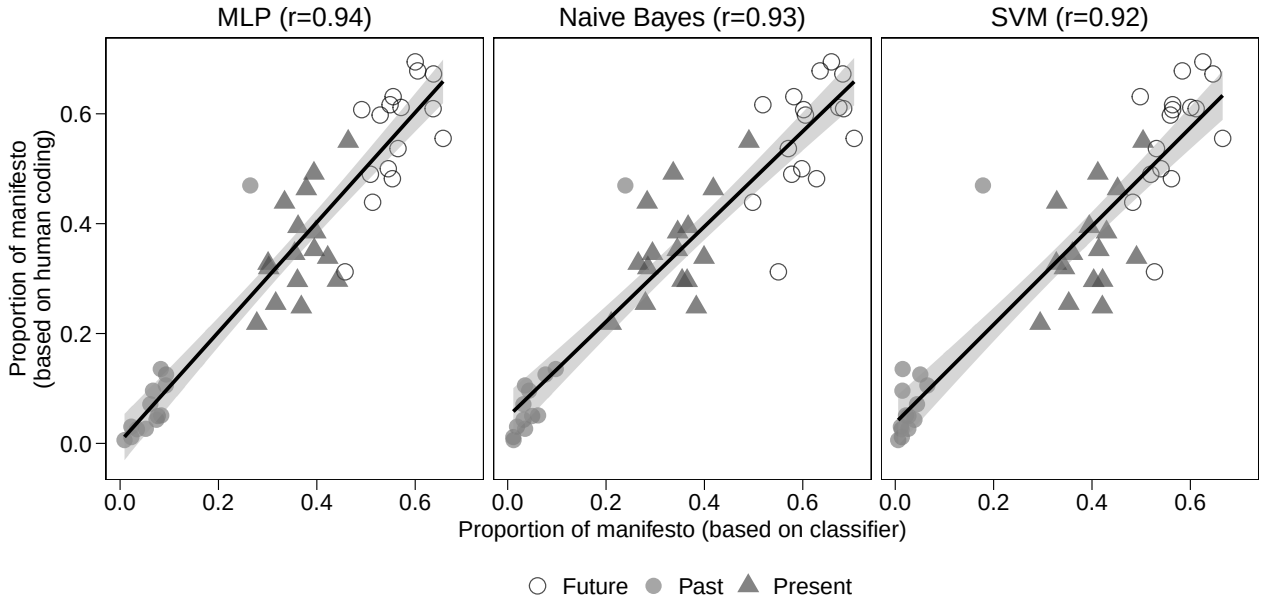
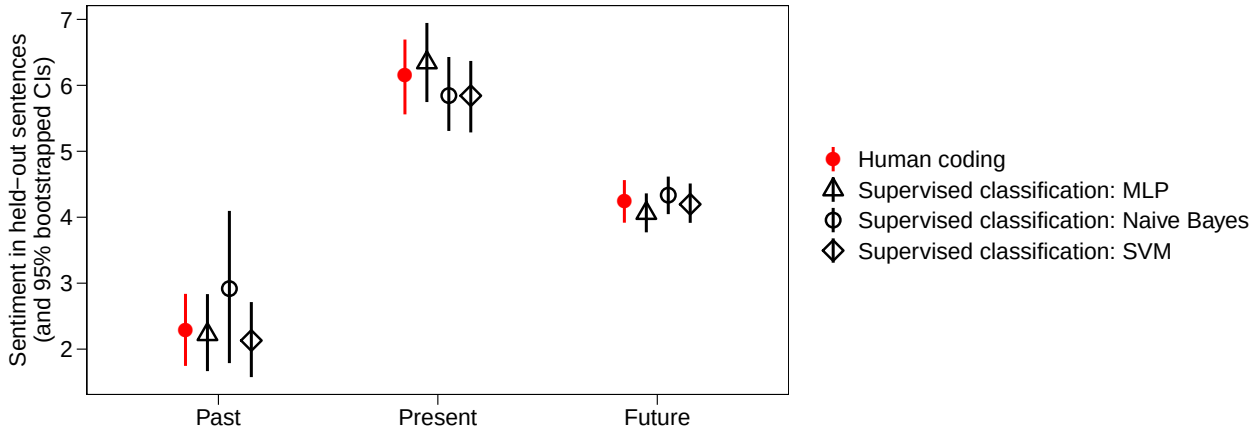


Figure A7: Comparison of aggregated sentiment based on sentences from the held-out test set and human coding of the same set of sentences



C.3 Identifying the Most Unique Words in Each Class

Third, I check words that are distinctive in sentences from each class. I use so called 'keyness statistics' to identify unique terms. 'Keyness' compare the differential associations of words with a target and a reference group. Higher values imply that a term is more more frequent than expected in the respective class (compared to the other classes). Chi^2 values are signed positively if the observed value in a group exceeds the expected value. Figures A8 and A9 display the 20 terms with the highest keyness values (chi^2) for each group and language. The terms most unique to each class provide further evidence for the face validity of the classification. Terms such as `has`, `been`, `was`, `were`, `since`, `past`, and `years` are unique to sentences classified as 'past'. Terms like `is`, `are`, `was`, `believe`, `our`, `now`, `today` are most unique to the class 'present', whereas words like `will`, `be`, `ensure`, `continue`, `establish`, `increase`, and `introduce` have very large chi^2 values in the class 'future'. The German terms correspond very closely to the English words. Figures A10–A12 repeat the analysis for each class separately for each country. The country-specific keyness statistics point to similarity across the countries.

Figure A8: 'Keyness' statistics for English statements classified as past, present, and future

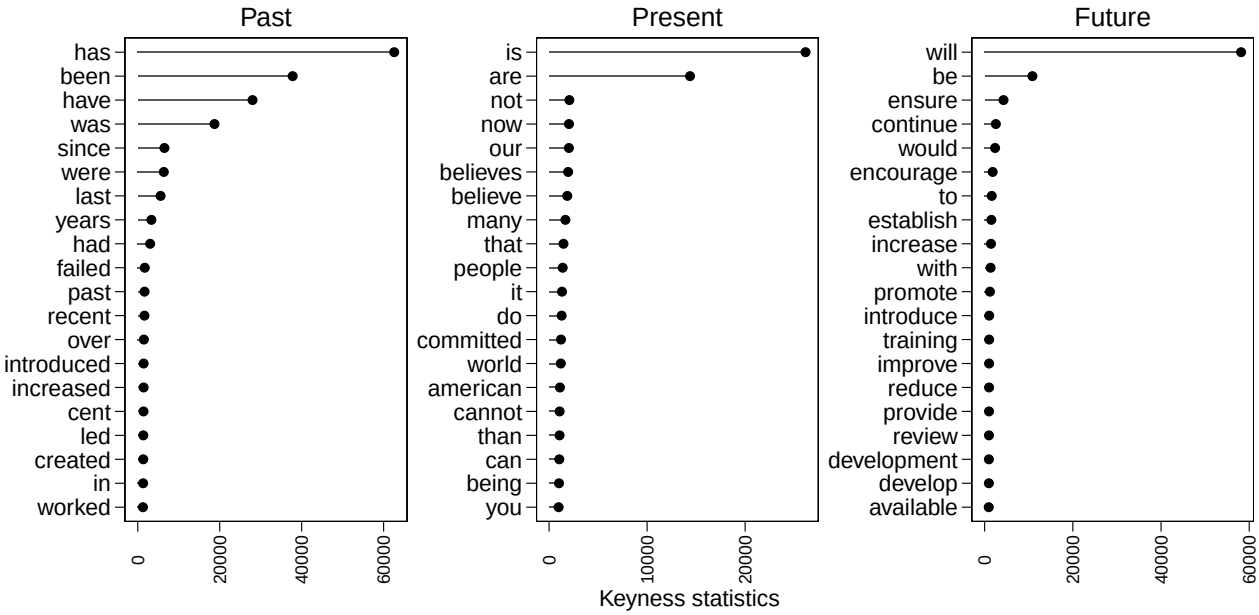


Figure A9: 'Keyness' statistics for German statements classified as past, present, and future

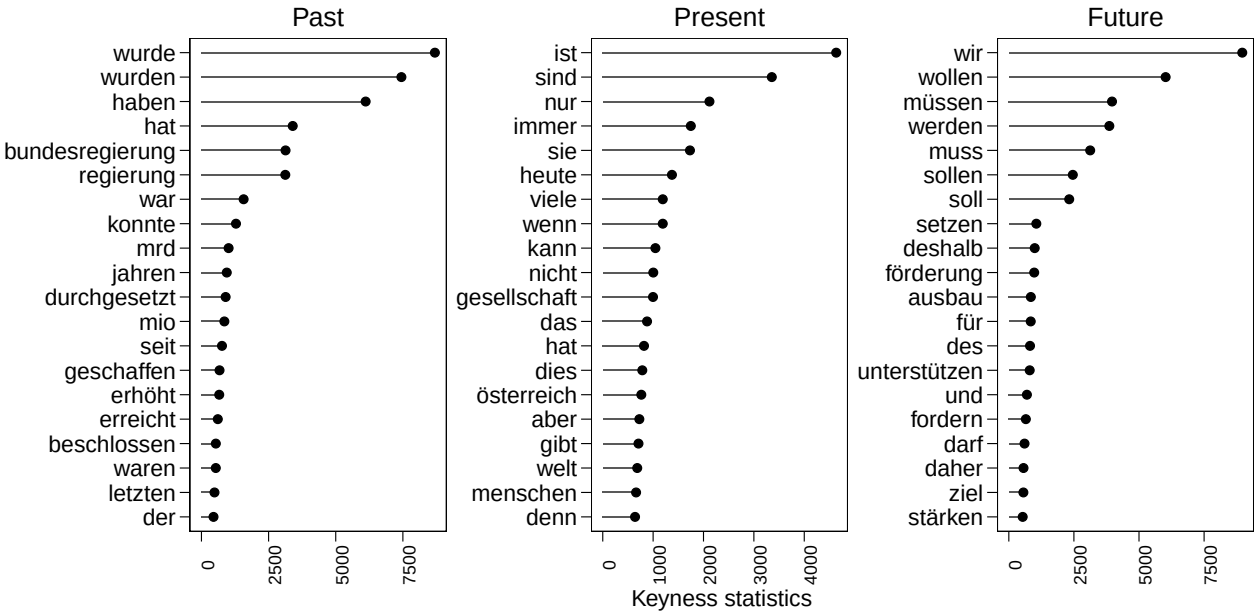


Figure A10: 'Keyness' statistics for statements classified as past, separate analyses for each country

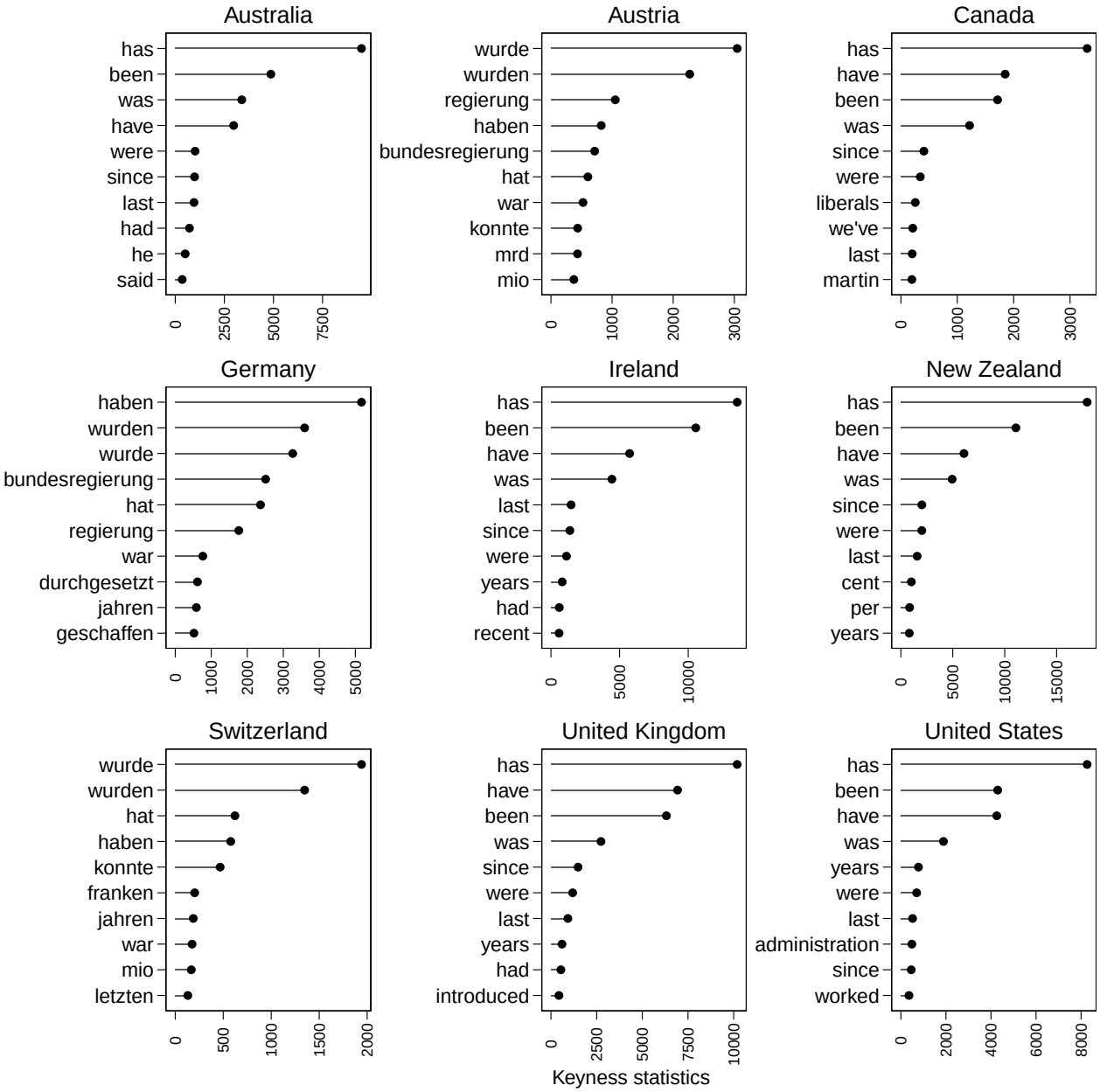


Figure A11: 'Keyness' statistics for statements classified as present, separate analyses for each country

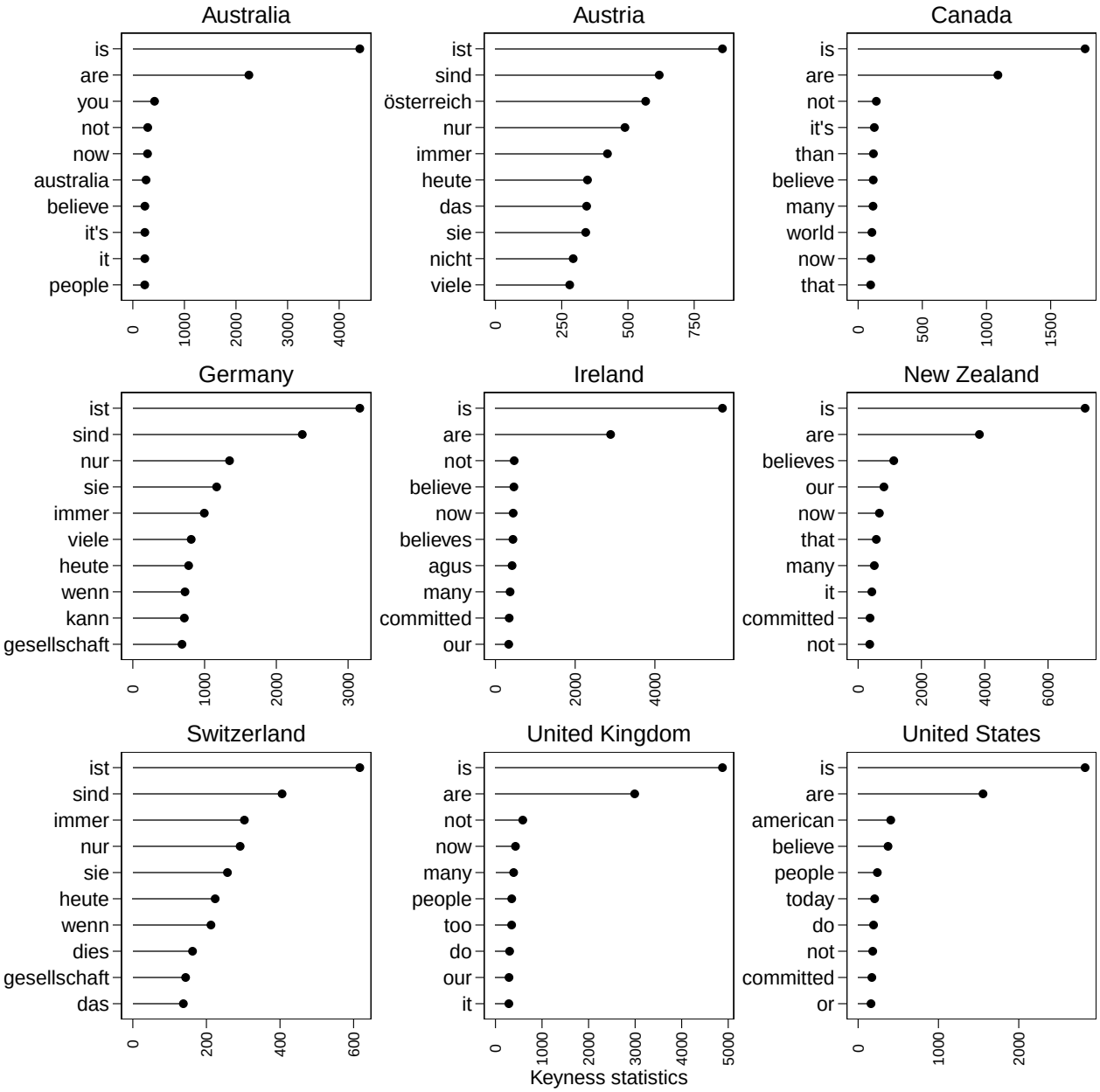
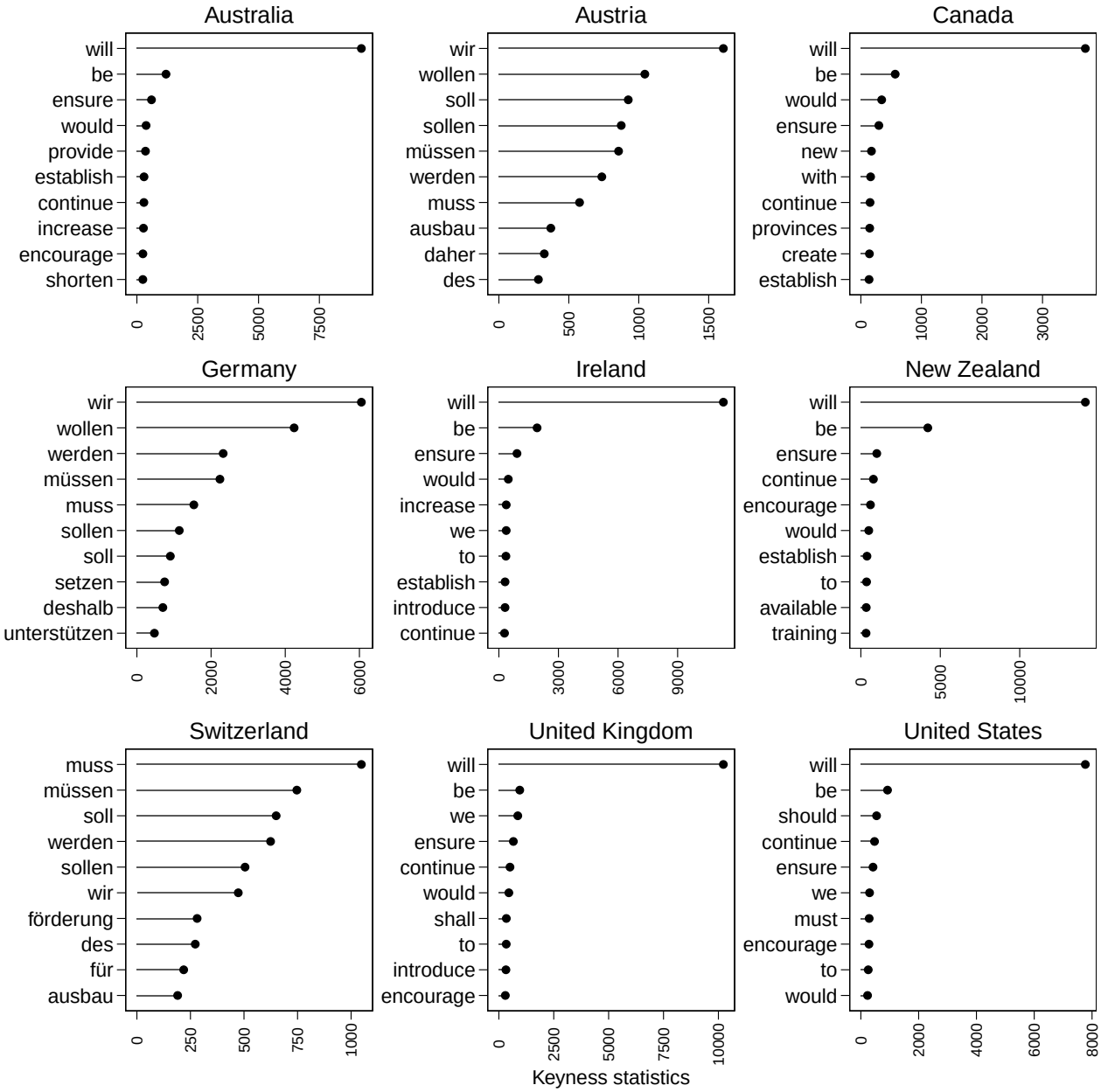


Figure A12: 'Keyness' statistics for statements classified as future, separate analyses for each country



C.4 Typical and Randomly Selected Sentences For Each Class and Different Levels of Sentiment

Tables A3 and A4 report the 10 English and German sentences from each class with the highest probabilities of belonging to each class.[8] In addition, Tables A5 and A6 report five randomly drawn sentences from each class in each language.The qualitative assessment further strengthens the face validity of the findings.

Tables A7 and A8 report the most positive and most negative sentences, according to the Lexicoder Sentiment Dictionary in each class for incumbents and non-incumbents. This dictionary has been developed for political and economic news (Young and Soroka 2012), has recently been applied to political speech, and is available in German and English (Proksch et al. 2019).

[8]To ease interpretation, I only selected natural sentences and removed quasi-sentences before filtering based on probabilities. The qualitative assessment does not change when adding quasi-sentences.

Table A3: The 5 English natural sentences with the highest posterior probabilities for each class and language

Class	Sentence	Posterior prob.
Future	9 New Zealand First will not alter current bulk funding for relief teachers but will ensure that under special circumstances (ie influenza epidemic) it will provide additional funding.	1.00
Future	A National Government will upgrade and develop the statistical services essential for effective planning, will make full use of computer models and will make this information widely available.	1.00
Future	There will be established Regional Road Safety Councils which will replace the present Road Safety Committees and the existing Road Safety Council which will be disbanded.	1.00
Future	There will be established Regional Road Safety Councils which will replace the present Road Safety Committees and the existing Road Safety Council which will be disbanded.	1.00
Future	The basis on which grants or subsidies will be made will be clearly determined so that organisations making application will know beforehand the amount to which they are entitled.	1.00
Past	A new Carers' Benefit Scheme has been introduced and the Carers' Allowance, a scheme introduced by Fianna Fáil, has been extended from 9,000 to nearly 25,000 this year.	1.00
Past	Responding to a suggestion that the speech was low-key, he said it did not matter whether a policy speech was high or low-keyed, what mattered was the content.	1.00
Past	in November 1982 a special tax rebate of US-Dollars250 for pensioners was introduced, the basic tax threshold was increased and tax rates were reduced.	1.00
Past	LABOR'S POSITION The Federal Labor Government has made the tax system much fairer than it was when John Howard was Treasurer.	1.00
Past	Under the Tories, the earnings link for state pensions has been ended, VAT on fuel has been imposed, SERPS has been undermined and community care is in tatters.	1.00
Present	At the heart of Liberal policies on crime is the belief that a safer Canada is one where crime is not only punished but prevented.	1.00
Present	At the heart of Liberal policies on crime is the belief that a safer Canada is one where crime is not only punished but prevented.	1.00
Present	You might take just one or you might take none because you already know how you are going to vote.	1.00
Present	In the Democrats it's what you believe in and what you do that matters, not who or what you are.	1.00
Present	It adds: Now you say you support Labor: now you say, the Senate should not use its powers, now you say an early election is wrong.	1.00

Table A4: The 5 German natural sentences with the highest posterior probabilities for each class and language

Class	Sentence	Posterior prob.
Future	Nicht die Schädlichkeit eines Produktes oder einer Aktivität auf die Umwelt soll bewiesen werden müssen, um ein Verbot zu erreichen, sondern die Verursacher sollen die Unschädlichkeit beweisen müssen.	1.00
Future	Wir wollen uns kulturell und politisch betätigen, wir wollen uns für ein Leben mit oder ohne Kinder entscheiden können, wir wollen über unsere eigene Lebensgeschichte selbst bestimmen.	1.00
Future	Dazu müssen wir Preisstabilität herstellen und erhalten; die öffentliche Neuverschuldung abbauen; die Bedingungen für Eigenkapitalbildung verbessern; die Neugründung von Unternehmen erleichtern; bürokratische Bremsklötze beseitigen.	1.00
Future	Wir Sozialdemokraten wollen deshalb keinen Obrigkeitsstaat, dem die eigene Hoheit am höchsten steht; wir wollen deshalb auch keinen alles lenkenden und alles verwaltenden Staat; wir sind gegen bürokratische Ausuferungen.	1.00
Future	Wir wollen die soziale Sicherung bei Pflegebedürftigkeit unter Vorrang der ambulanten Pflege vor Heimpflege und unter besonderer Förderung nachbarschaftlicher und familiärer Hilfe verbessern.	1.00
Past	Teilzeitarbeit wurde arbeitsrechtlich gesichert und gleichzeitig erleichtert, ebenso der Abschluß von befristeten Arbeitsverträgen für Arbeitslose, überholte ausbildungshemmende Vorschriften haben wir aufgehoben.	0.98
Past	Gegen erheblichen Widerstand der CDU haben wir ein Reformprogramm durchgesetzt, mit dem wesentliche Elemente des verkehrspolitischen Programms der SPD verwirklicht wurden.	0.98
Past	Seit der Übernahme des Verteidigungsministeriums durch die Volkspartei im Jahr 1987 wurden bereits richtungsweisende Verbesserungen sowohl in der Heeresgliederung, als auch in der Ausrüstung und Bewaffnung des Bundesheers erreicht.	0.98
Past	Die Renten wurden wesentlich erhöht Fortschrittliche Gesetze zur gerechten Gestaltung des Verhältnisses zwischen Arbeitnehmer und Unternehmer wurden verabschiedet.	0.98
Past	Die soziale Absicherung wurde verbessert, die Förderung in den benachteiligten Gebieten ausgeweitet, ein flächenbezogener Einkommensausgleich eingeführt und über eine Quotenregelung wurden die Milchüberschüsse beseitigt.	0.98
Present	Wohlstand, Arbeitsplätze, soziale Sicherheit und die natürlichen Lebensgrundlagen können auf Dauer nur erhalten bleiben, wenn die deutsche Wirtschaft leistungsfähig und international wettbewerbsfähig ist.	1.00
Present	Deutschland ist nicht nur ein geachteter Partner der westlichen Welt, man setzt hohes Vertrauen, aber auch hohe Erwartungen in die Leistungsfähigkeit der Bundesrepublik.	1.00
Present	Innere Sicherheit ist eine politische Aufgabe Die innere Sicherheit ist dann am besten gewährleistet, wenn der Staat von freien Bürgern getragen wird.	1.00
Present	Bei Abgabenquoten über 40 Prozent nehmen die Steuereinnahmen aber wenig oder gar nicht zu: Die Flucht in die illegale Wirtschaft setzt ein die Wettbewerbsfähigkeit der legalen Wirtschaft sinkt.	1.00
Present	Sicherheit im persönlichen Leben, in der Gesellschaft und im Staat ist ein zentrales Bedürfnis, aber auch ein Recht von Frauen und Männern, Kindern, Jugendlichen und Senioren in Österreich.	1.00

Table A5: 5 randomly selected English natural sentences per class

Class	Sentence	Posterior prob.
Future	The Naval Reserve will ultimately operate 40 of the fleet's 600 ships.	0.98
Future	Our overall aim will be a comprehensive health service geared to the future needs of all the Irish people.	0.99
Future	Fianna Fail will establish a Land Development Authority responsible for structural reform and the implementation of the EEC Farm Retirement and Farm Modernisation Scheme.	1.00
Future	SPREADING TECHNOLOGY We will develop Information Technology Centres as resources of technological expertise in collaboration with local colleges, polytechnics and universities and computing.	0.95
Future	Included will be the FRED programme, the ARDA programme, the ADA programme, the Atlantic Development Board and the Cape Breton Development Corporation.	0.93
Present	Thare are at present almost 8,000 on the waiting lists of the Dublin Local Authorities.	0.93
Present	As at the last election, we are not making any promises which we cannot keep.	0.96
Present	National fully recognises the cultural difficulties and educational problems that arise for Polynesian migrants and their children as a result of their value system and general cultural background.	0.96
Present	Labour believes that the administration of a water course or river should come entirely within the province of the appropriate catchment authority.	0.77
Present	(f) We believe that present official policy has a misguided emphasis on extending residential accommodation and a mistaken preference for large institutions.	0.78
Past	Even more fundamentally, we have established a renewed climate of respect for law and law enforcement.	0.76
Past	The rights of part-time workers have been clarified by recent court judgements which we welcome.	0.79
Past	(c) to expanding the markets in South and Central America and the Caribbean which were opened up by the last National Government.	0.88
Past	In the past two years, the Commonwealth Employment Service has placed 900000 people in jobs.	0.78
Past	Poverty has not improved at all over the last 20 I years.	0.84

Table A6: 5 randomly selected German natural sentences per class

Class	Sentence	Posterior prob.
Future	Die Not der Betroffenen, die Achtung vor den internationalen Verträgen, Menschenrecht und Menschenwürde machen unser Anliegen zu einem Anliegen der gesitteten Welt.	0.83
Future	Damit eröffnen wir den Weg aus der Sackgasse der herrschenden Agrarpolitik.	0.77
Future	Die Schaffung ökologischer Anreize durch Höherbelastung fossiler Energieträger und Entlastung emeuerbarer Energieformen, sowie durch eine an Schadstoff und Verbrauch orientierte KFZSteuer.	0.87
Future	Wir bekennen uns zur partnerschaftlichen Gesellschaft und damit zu toleranter Auseinandersetzung und friedlicher Konfliktbeilegung.	0.94
Future	sicherzustellen, daß Familienarbeit und Erwerbsarbeit die gleiche gesellschaftliche Anerkennung genießen und ehrenamtliches Engagement in der Gesellschaft entscheidend aufgewertet wird.	0.81
Present	Präventives, Konfliktmanagement und erweiterte Sicherheit Die Welt ist freier, aber nicht friedlicher geworden.	0.97
Present	Sie haben das Recht auf freie Entscheidung, in welche Behandlung und Versorgung sie sich begeben.	0.78
Present	Klein- und Mittelbetriebe: Diese stellen nach wie vor das Rückgrat der heimischen Wirtschaft dar.	0.94
Present	und wir werden alles dazu tun, damit dies auch in Zukunft so bleibt.	0.76
Present	Das Problem ist dabei nicht die Zahl der Rentnerinnen und Rentner, sondern die Zahl der Arbeitslosen.	0.93
Past	Ausschlaggebend für diese positive Entwicklung war der Kurswechsel, der mit dem Eintritt der Österreichischen Volkspartei in die Bundesregierung vollzogen wurde.	0.97
Past	Unter der Führung von Kurt Georg Kiesinger wurde nach der Zeit des stürmischen Wiederaufbaus der Übergang in einen stetigem wirtschaftlichen Fortschritt gemeistert.	0.89
Past	Seit 1970 war der Ausbau der Schulen, Universitäten und der Forschungseinrichtungen einer der Schwerpunkte der Politik der sozialistischen Bundesregierung.	0.78
Past	Zuletzt wurden mehr als 90 Prozent der österreichischen Exportleistung mit industriellen Produkten im Wert von nahezu 500 Mrd.	0.83
Past	+ Wir haben allein 1989 für die Arbeitnehmer einen Nettoeinkommenszuwachs von 6 Prozent, seit 1986 sogar von 15 Prozent erreicht.	0.85

Table A7: The 5 most positive English natural sentences by incumbents and opposition parties (according to the Lexicoder Sentiment Dictionary) per class

Class	Posterior prob.	Sentence	Incumbency	Sentiment
Future	0.92	Voluntary participation with adequate incentives is essential to the effective conservation of our soil and water resources.	Opposition	41.18
Future	0.99	We will encourage balanced, stable, caring communities and policies which protect and strengthen family life.	Opposition	40.00
Future	0.98	These and other qualitative improvements will ensure effective American strength at affordable cost.	Opposition	38.46
Future	0.99	We will ensure that our patent laws protect legitimate rights while not stifling innovation and creativity.	Opposition	37.50
Future	0.98	TRUTH AND MORALITY WILL BE RESTORED Respect the eternal God and His right to man's allegiance.	Opposition	37.50
Future	0.96	are a significant innovation and will provide maximum flexibility and scope for better performance and reward.	Opposition	37.50
Future	0.91	We must achieve an equitable pension system with improved benefit safeguards and adequate benefit levels.	Incumbent	46.67
Future	0.96	And we will ensure quality child care which is safe and secure.	Incumbent	41.67
Future	1.00	PROVIDE ADEQUATE RESOURCES Adequate resources will be made available to community organisations.	Incumbent	41.67
Future	0.98	The Charter's commitment to modern, open services will help them to win the respect that good service deserves.	Incumbent	38.89
Future	0.90	Strengthening the Capacity of Charities Improved tax incentives strengthen the capacity of charities to meet community needs, while measures to ensure greater accountability reinforce public confidence.	Incumbent	38.46
Past	0.82	Throughout its existence the Party has affirmed that human progress and happiness	Opposition	25.00
Past	0.83	it was in the context of our true needs, our true role in our region, and our true relations with our great ally, the United .	Opposition	24.00
Past	0.84	This imaginative and flexible approach to peace making has been a consistent element of this entire process.	Opposition	23.53
Past	0.92	Rapid scientific and technological advance has created the means of achieving undreamed of economic advance and higher incomes.	Opposition	22.22
Past	0.84	The Progressive Conservative Party has always believed in balancing economic/human progress with the need to maintain a clean, healthy and sustainable environment.	Opposition	21.74
Past	0.84	His peace efforts have won strong bipartisan support and international applause.	Incumbent	54.55
Past	0.89	bill with greatly enlarged equitable benefits was enacted gratefully and proudly.	Incumbent	36.36
Past	0.89	We have firmly and actively encouraged human rights reform, and results have been achieved.	Incumbent	35.71
Past	0.88	Advancing Equality The Liberal government has strengthened and advanced the equality rights of Canadians and promoted the rich diversity of our population.	Incumbent	31.82
Past	0.85	Health Our tremendous investment in health care has brought us almost miraculous advances.	Incumbent	30.77
Present	0.80	"The right to adequate medical care and the opportunity to achieve and enjoy good health.	Opposition	46.67
Present	0.80	When properly balanced, they are kindred means for advancing individual achievement.	Opposition	45.45
Present	0.83	Secure in its strength and its principles, the United States wants strong, healthy neighbors.	Opposition	42.86
Present	0.97	Good Friday Agreement The Good Friday Agreement is an all Ireland Agreement.	Opposition	41.67
Present	0.81	Decent, affordable and safe housing is vital to personal happiness and family life.	Opposition	38.46
Present	0.93	The good faith of the United States is pledged likewise to defending Formosa.	Opposition	38.46
Present	0.91	Safe, secure housing is an essential part of strong communities and strong families.	Incumbent	38.46
Present	0.81	We recognize the tremendous contributions of adoptive parents and foster parents.	Incumbent	36.36
Present	0.93	Securing a sound and strong economy is fundamental to expanding opportunity.	Incumbent	36.36
Present	0.89	Safeguarding individual rights, promoting equality of opportunity and encouraging the pursuit of excellence in the arts are essential elements for a strong and vital community.	Incumbent	36.00
Present	0.84	Our desire for world peace and progress demands strong support for the United Nations and its agencies.	Incumbent	35.29

Table A8: The 5 most English negative natural sentences by incumbents and opposition parties (according to the Lexicoder Sentiment Dictionary) per class

Class	Posterior prob.	Sentence	Incumbency	Sentiment
Future	0.98	We will abolish the nonsensical rules that make it difficult for Heads to exclude disruptive pupils	Opposition	-31.25
Future	0.98	However, the Republican Party will also halt excessive government spending by eliminating waste, fraud, and duplication.	Opposition	-31.25
Future	0.99	We will establish police hate crime investigation units to coordinate information and action against racist, homophobic and other hate crimes.	Opposition	-30.00
Future	0.99	Research We will step up medical research on the major killers and crippling diseases, cancer, heart disease, arthritis, mental illness.	Opposition	-30.00
Future	0.98	WE WILL ALSO INTRODUCE TOUGHER PENALTIES AGAINST COUNTERFEITERS TO PROTECT THE PUBLIC FROM DANGEROUS AND SHODDY GOODS.	Opposition	-29.41
Future	0.87	(i) remove criminal penalties in areas of trivial conduct to avoid the overuse of the criminal sanction.	Opposition	-29.41
Future	0.98	demonstrating that society will not put up with violent crime by severely punishing those who offend	Incumbent	-31.25
Future	0.99	We will seek stiff penalties for those who smuggle illegal aliens into the country, and for those who produce or sell fraudulent documents.	Incumbent	-26.09
Future	0.90	We must continue and increase federal help in the Indian's battle against poverty, unemployment, illiteracy, ill health and poor housing.	Incumbent	-25.00
Future	0.97	This will not restrict the request for trial by jury for serious charges such as murder, grievous injury and sexual violation.	Incumbent	-23.81
Future	0.86	Strictly enforce antitrust and trade practice laws to combat administered pricing, supply limitations and other restrictive practices.	Incumbent	-23.53
Future	0.99	We will reform cumbersome habeas corpus procedures, used to delay cases and prevent punishment of the guilty.	Incumbent	-23.53
Past	0.83	, families disrupted, the waste in lost production, small business ruined, the human waste- the fight against inflation has not been won.	Opposition	-28.57
Past	0.83	The Democratic Congress has produced a jumble of degrading, dehumanizing, wasteful, overlapping, and inefficient programs that invite waste and fraud but inadequately assist the needy poor.	Opposition	-26.92
Past	0.93	Over the past few years we have been shocked by numerous reports of murders ,violent attacks and sexual abuse.	Opposition	-26.32
Past	0.88	The widespread pursuit of restrictive policies has plunged the world into the worst slump for 50 years, and the poor countries have suffered most.	Opposition	-20.83
Past	0.88	The widespread pursuit of restrictive policies has plunged the world into the worst slump for 50 years, and the poor countries have suffered most.	Opposition	-20.83
Past	0.84	The Democrat-controlled Congress has produced a jumble of degrading, dehumanizing, wasteful, overlapping and inefficient programs failing to assist the needy poor.	Incumbent	-28.57
Past	0.80	Violent Offending National has recognised the problem of violent offending and gang violence in New Zealand society by taking a number of steps to meet this situation.	Incumbent	-25.93
Past	0.88	* There has been an unprecedented success from measures taken to eliminate fraud, abuse and unwarranted claiming.	Incumbent	-25.00
Past	0.91	The maximum penalties for trafficking in hard drugs and for attempted rape have been raised to life imprisonment.	Incumbent	-22.22
Past	0.90	There were, for example, too few ground and air forces to fight limited war, although such wars were a means to continued Communist expansion.	Incumbent	-20.83
Present	0.96	Victims of Crime Victims of crime are too often the forgotten people in our criminal justice system.	Opposition	-41.18
Present	0.87	Growing old in America for too many means neglect, sickness, despair and, all too often, poverty.	Opposition	-37.50
Present	0.86	It is too impersonal, too inflexible, too centralised and too bureaucratic to respond to the needs of patients.	Opposition	-33.33
Present	0.85	Some aspects of the steadily growing crime rate are alarming, particularly senseless crimes of wanton destruction and hooliganism.	Opposition	-33.33
Present	0.85	Terrorism, International Crime, and Cyber Threats America faces a new and rapidly evolving threat from terrorism and international crime.	Opposition	-31.58
Present	0.95	Nothing we do to fight crime is more important than fighting the crime and violence that threatens our children.	Incumbent	-31.58
Present	0.89	It means meeting new challenges such as international crime and terrorism, environmental degradation, and pandemic diseases head-on.	Incumbent	-29.41
Present	0.88	Excessive debt means all New Zealanders face unacceptable risks if there is a major international economic shock.	Incumbent	-29.41
Present	0.90	Unfortunately, violence against women is no stranger to America, but a dangerous intruder we must work together to drive from our homes.	Incumbent	-27.27
Present	0.92	BEATING CRIME AND VANDALISM There is now an epidemic of crime and vandalism in our country.	Incumbent	-25.00

D The Temporal Focus of Campaign Communication: Descriptive Evidence

This section provides additional results and plots relating to the focus on the past, present, and future in party manifestos. Table A9 displays three regression models that estimate the focus on the past (Model 1), present (Model 2) and the future (Model 3). The control variables correspond closely to the selection of covariates in Crabtree et al. (2020). Turning to Model 1 which uses the emphasis on the past as the dependent variable, the statistically significant coefficient of *Incumbent* corresponds to 80% of the standard deviation of the share of statements on the past. Incumbent parties' average emphasis on the past exceeds the focus on the past by opposition parties by around 5 percentage points. Model 2 does not suggest any significant and substantive differences in the focus on the present conditional on incumbency status. However, non-incumbents devote around four percentage points less emphasis on the future (Model 3). Figure A13 shows the results of two-sample t-tests and pairwise post hoc comparisons of the differences in the focus on the past between incumbents and non-incumbents.

Figure A14 plots the proportions of manifesto statements on the past, present, and future over time in each country. The loess regression lines do not reveal any consistent trends. The focus on the past is consistently on the lowest level, relative to statements on the future. Only in some countries parties tend to have increased their focus on the future (Australia, Germany). In New Zealand parties used to draft manifestos as a collection of future-related statements up until the 1980. Often, over 80% of manifestos discussed the future. Since the 1990s and 2000s the focus on the present has increased substantively, making the country more similar to the other democracies in the sample. In most countries we do not observe changes or consistent patterns over time. Figure A15 plots the proportions for each party family. We do not observe many consistent patterns, but conservative and agrarian parties tend to address the past more often than other parties. Future research could investigate whether this is caused by higher degrees of nostalgic rhetoric (Lammers and Baldwin 2018). Special issue parties, on the other hand, put on average more emphasis on the future than other party families.

I also use an alternative aggregation formulas which estimates the emphasis on prospective rhetoric as $\frac{\sum future}{\sum past + \sum future}$. A value of 1 implies that all sentences relate to the future, lower

values imply a higher emphasis on the past.[9] Figure A16 shows the results from this aggregation. In most countries we observe lower values for incumbents. The opposition focuses more on the future relative to the past. Table A11 reports the coefficients and confidence intervals from a linear regression with this proportion as the dependent variable. The positive and statistically significant coefficient for *Opposition* offers support for the conclusions derived from the boxplots.

In the paper, I use the proportions of (quasi-)sentences about the past, present, and future. However, since some of the manifestos are quasi-sentence segmented, we could also consider the proportions of words in each class. Using the number of words controls for the possibility of systematic differences in sentence lengths across classes. Thus, I also estimate the manifesto proportions of each class by dividing the number of words in each class by the number of words in the entire manifesto. Figure A17 plots the manifesto proportions of statements on the past, present, and future when using the proportions of words in each class (x-axis) vs the proportions of sentences in each class (y-axis). The proportions correlate almost perfectly (all correlation coefficients exceed 0.97). Using the proportions of words or sentences as the indicator for prospective and retrospective rhetoric does not influence the results.

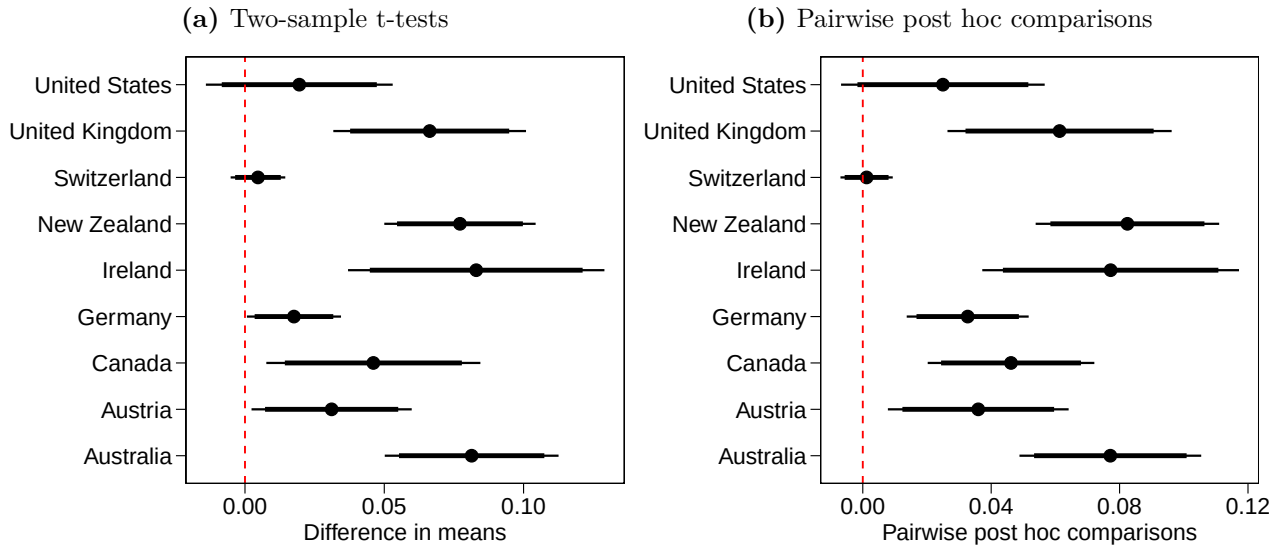
Table A9: Predicting the emphasis on the past, present, and future in party manifestos

	Model 1 (Past)	Model 2 (Present)	Model 3 (Future)
Incumbent	0.05*	−0.00	−0.05*
	[0.04; 0.06]	[−0.02; 0.01]	[−0.07; −0.03]
RILE	0.18*	0.46*	−0.63*
	[0.06; 0.29]	[0.22; 0.70]	[−0.88; −0.37]
RILE^2	0.12*	0.33*	−0.44*
	[0.00; 0.25]	[0.07; 0.59]	[−0.73; −0.14]
Extremist party	0.01	0.03	−0.04*
	[−0.00; 0.02]	[−0.01; 0.06]	[−0.07; −0.00]
GDP growth	−0.00	−0.00	0.00
	[−0.00; 0.00]	[−0.00; 0.00]	[−0.00; 0.01]
Year	−0.00*	0.00*	−0.00
	[−0.00; −0.00]	[0.00; 0.00]	[−0.00; 0.00]
R^2	0.49	0.31	0.23
Adj. R^2	0.48	0.30	0.21
Number of observations	575	587	587
RMSE	0.05	0.10	0.11
Number of clusters (Elections)	142	142	142

* 0 outside the confidence interval.
Note: 95% confidence intervals in parentheses. All models are linear regressions with fixed effects for countries. Robust standard errors clustered by election.

[9] I thank one of the anonymous reviewers for this suggestion.

Figure A13: Differences in means in the focus on the past in manifestos written by incumbent parties and non-incumbents



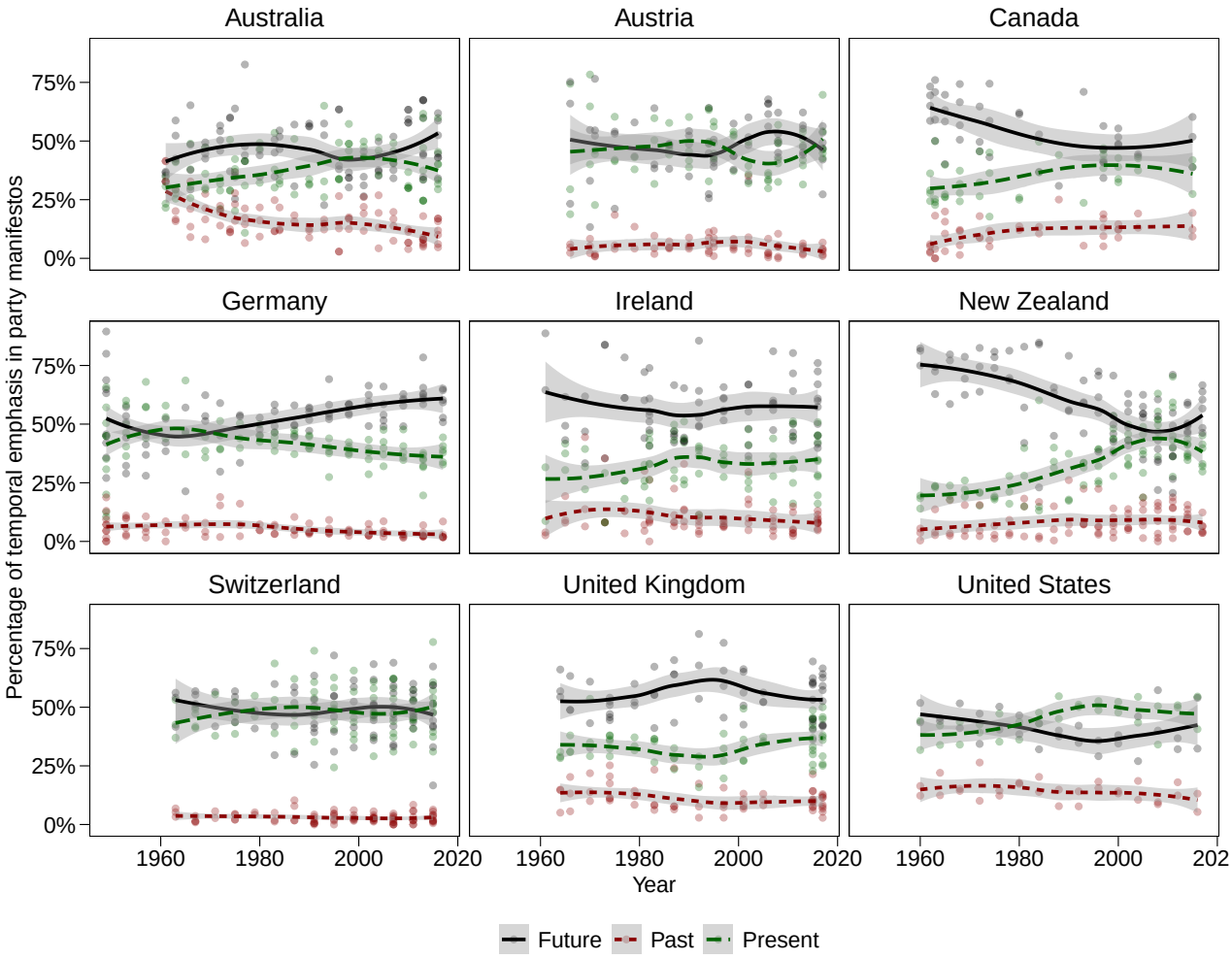
Note: Positive values imply that incumbents devote more attention to the past than non-incumbents. The post hoc comparisons from Figure A13b are based on Model 1 of Table A10 which interacts the country and incumbency status. Errorbars indicate 90% (thick line) and 95% (thin line) confidence intervals.

Table A10: Predicting the emphasis on the past in party manifestos

	Model 1
Opposition (ref.: Incumbent)	−0.08*
	[−0.11; −0.05]
Austria (ref.: Australia)	−0.12*
	[−0.15; −0.08]
Canada	−0.05*
	[−0.09; −0.01]
Germany	−0.12*
	[−0.15; −0.10]
Ireland	−0.03
	[−0.08; 0.02]
New Zealand	−0.04*
	[−0.07; −0.01]
Switzerland	−0.16*
	[−0.18; −0.14]
United Kingdom	−0.03
	[−0.06; 0.00]
United States	−0.04*
	[−0.07; −0.01]
RILE	0.00*
	[0.00; 0.00]
RILE^2	0.00*
	[0.00; 0.00]
Extremist party	0.01
	[−0.01; 0.02]
GDP growth	−0.00
	[−0.00; 0.00]
Year	−0.00*
	[−0.00; −0.00]
Opposition × Austria	0.04*
	[0.00; 0.08]
Opposition × Canada	0.03
	[−0.01; 0.07]
Opposition × Germany	0.04*
	[0.01; 0.08]
Opposition × Ireland	−0.00
	[−0.05; 0.05]
Opposition × New Zealand	−0.01
	[−0.05; 0.04]
Opposition × Switzerland	0.08*
	[0.05; 0.11]
Opposition × United Kingdom	0.02
	[−0.03; 0.06]
Opposition × United States	0.05*
	[0.01; 0.10]
R^2	0.53
Adj. R^2	0.51
Number of observations	575
RMSE	0.05
Number of clusters (Elections)	142

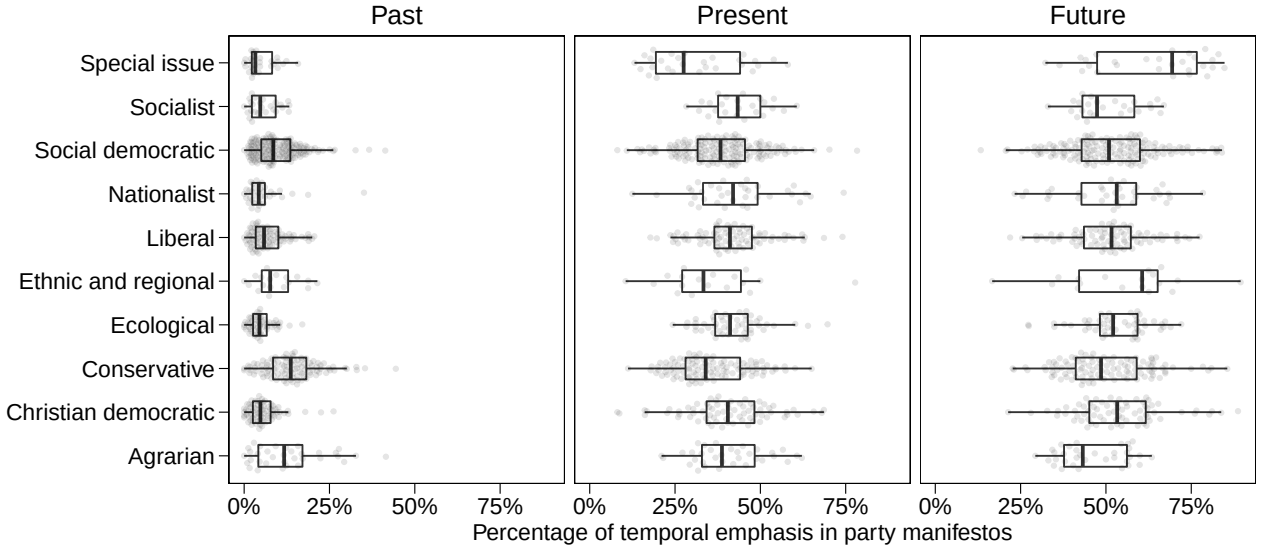
* 0 outside the confidence interval.
Note: 95% confidence intervals in parentheses. Robust standard errors clustered by election.

Figure A14: The development of emphasis on the past, present, and future over time



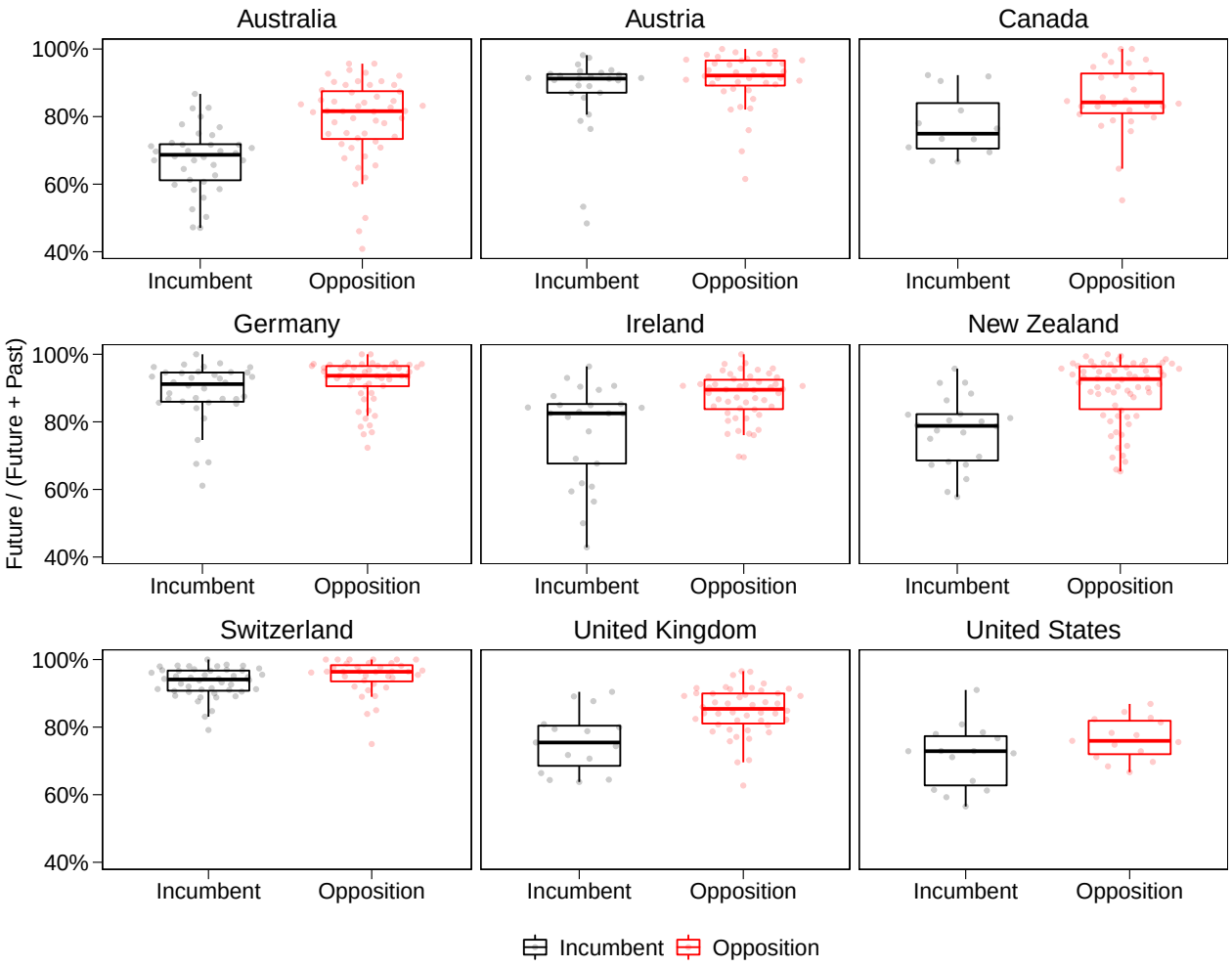
Note: The plot shows loess regression lines. Each point depicts the proportion of one class in one manifesto.

Figure A15: The emphasis on the past, present, and future by different party families



Note: Each point depicts the proportion of one class in one manifesto.

Figure A16: The emphasis on prospective (future) rhetoric relative to pure retrospective statements (past)



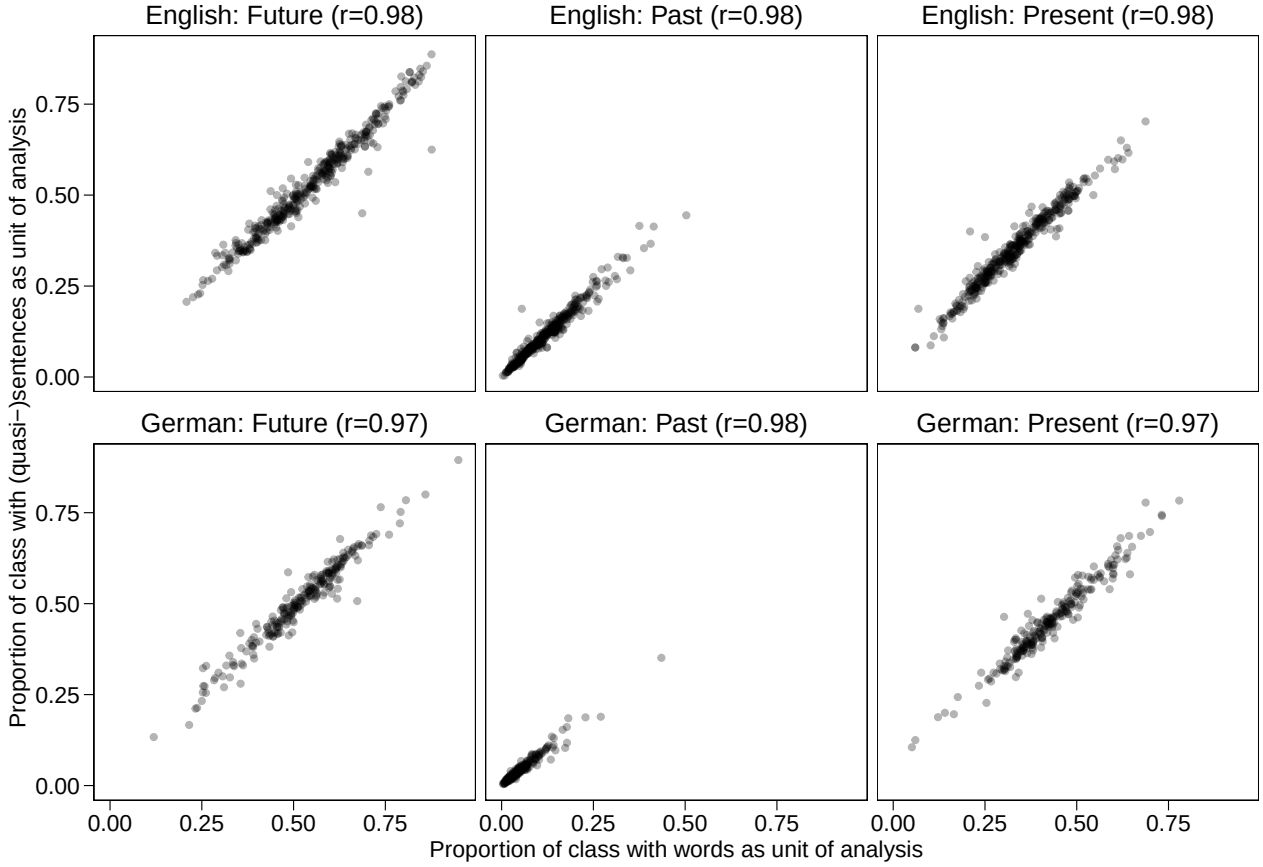
Note: Each point depicts the proportion of one class in one manifesto. Higher values imply a higher focus on the future relative to the past

Table A11: Predicting the focus on retrospective (future) relative to purely retrospective (past) statements in party manifestos

	Model 1	Model 2
Incumbent	0.07*	0.08*
	[0.05; 0.09]	[0.06; 0.10]
RILE	−0.38*	−0.37*
	[−0.57; −0.19]	[−0.57; −0.16]
RILE^2	−0.26*	−0.28*
	[−0.49; −0.02]	[−0.52; −0.03]
Extremist party	−0.01	−0.02
	[−0.04; 0.01]	[−0.04; 0.01]
Year	0.00*	0.00
	[0.00; 0.00]	[−0.00; 0.00]
GDP growth		0.00
		[−0.00; 0.00]
R^2	0.42	0.44
Adj. R^2	0.41	0.42
Number of observations	621	587
RMSE	0.09	0.09
Number of clusters (Elections)	150	142

* 0 outside the confidence interval.
Note: 95% confidence intervals in parentheses. The dependent variable is estimated as (future) / (future + past). All models are linear regressions with fixed effects for countries. Robust standard errors clustered by election.

Figure A17: Comparing the estimated proportions of past, present, and future when using the number of words or number of sentences as the unit of analysis

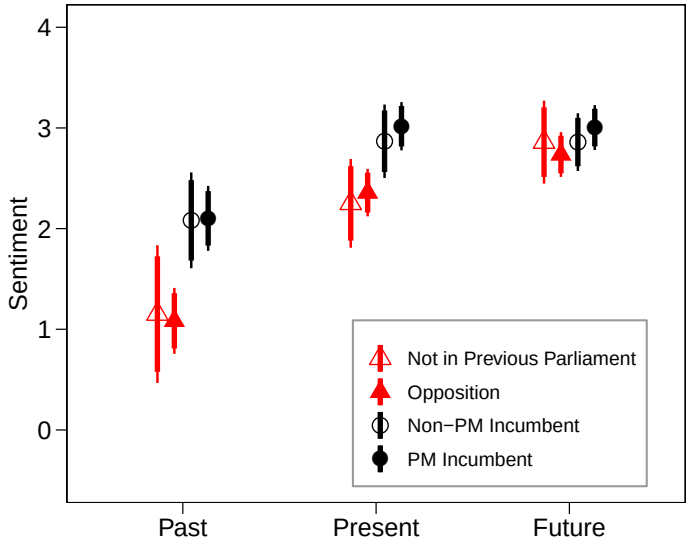


E The Temporal Focus and Sentiment

E.1 Additional Plots and Regression Tables

Table A12 reports the results of sentiment in statements on the past present, and future using the base model or regression models that include control variables which closely mirror the variables used by Crabtree et al. (2020). Table A13 reports the regression model used to construct Figure 2(a) in the paper and Figure A18. Model 1 uses a binary classification of incumbency status. Model 2 employs a more detailed classification by differentiating between parties not represented in the previous parliament, opposition parties that held at least one seat, smaller coalition partners, and the party of the president/prime minister.

Figure A18: Expected values of sentiment conditional on the temporal focus and a more detailed measurement of incumbency status



Note: Model 3 in Table A12 reports the coefficients used to calculate the expected values. Higher values imply more positive sentiment. Errorbars indicate 90% (thick line) and 95% (thin line) confidence intervals.

Table A12: Sentiment in party manifestos (using the LIWC sentiment dictionary and the aggregation formula recommended by Crabtree et al. (2020) as dependent variable)

	Model 1	Model 2	Model 3	Model 4	Model 5
(Intercept)	2.59*	2.64*	−27.26*	−21.98*	−13.32*
	[2.35; 2.82]	[2.40; 2.88]	[−37.15; −17.38]	[−33.19; −10.77]	[−25.66; −0.98]
Incumbent	0.22*	0.19*	0.24*	0.22*	0.24*
	[0.06; 0.37]	[0.03; 0.36]	[0.07; 0.41]	[0.05; 0.39]	[0.07; 0.41]
Class: Past (ref.: Future)	−1.60*	−1.65*	−1.65*	−1.60*	−1.60*
	[−1.86; −1.34]	[−1.92; −1.39]	[−1.92; −1.39]	[−1.87; −1.33]	[−1.86; −1.33]
Class: Present	−0.42*	−0.41*	−0.41*	−0.39*	−0.40*
	[−0.55; −0.29]	[−0.54; −0.28]	[−0.54; −0.28]	[−0.51; −0.26]	[−0.52; −0.27]
Incumbent × Past	0.80*	0.77*	0.77*	0.72*	0.79*
	[0.44; 1.17]	[0.42; 1.12]	[0.42; 1.12]	[0.37; 1.07]	[0.43; 1.16]
Incumbent × Present	0.41*	0.40*	0.40*	0.39*	0.39*
	[0.22; 0.60]	[0.21; 0.59]	[0.21; 0.59]	[0.20; 0.57]	[0.21; 0.58]
RILE			−2.40	−1.86	−2.12
			[−6.22; 1.41]	[−5.82; 2.10]	[−6.09; 1.85]
RILE^2			−2.43	−3.21	−1.83
			[−6.08; 1.23]	[−6.91; 0.49]	[−5.77; 2.11]
Extremist party			−0.16	−0.17	−0.19
			[−0.49; 0.17]	[−0.50; 0.16]	[−0.53; 0.14]
Year			0.02*	0.01*	0.01*
			[0.01; 0.02]	[0.01; 0.02]	[0.00; 0.01]
GDP growth			−0.00		
			[−0.02; 0.02]		
Unemployment				−0.01	
				[−0.04; 0.02]	
Inflation					−0.03*
					[−0.05; −0.00]
R^2	0.16	0.18	0.20	0.18	0.18
Adj. R^2	0.15	0.17	0.19	0.17	0.17
Number of observations	1848	1749	1749	1790	1796
RMSE	1.64	1.57	1.55	1.59	1.60
Number of clusters	621	587	587	601	603

* 0 outside the confidence interval.

Note: 95% confidence intervals in parentheses. Model 2 reproduces Model 1 but only keeps observations with available information on GDP growth. All models are linear regressions with robust standard errors clustered by manifesto. The models include country dummies which are omitted from the table.

Table A13: Predicting sentiment in party manifestos (using the LIWC sentiment dictionary and the aggregation formula recommended by Crabtree et al. (2020) as dependent variable)

	Model 1	Model 2
(Intercept)	−27.26*	−27.01*
	[−37.15; −17.38]	[−37.10; −16.92]
RILE	−2.40	−2.18
	[−6.22; 1.41]	[−5.97; 1.60]
RILE^2	−2.43	−2.53
	[−6.08; 1.23]	[−6.20; 1.14]
Extremist party	−0.16	−0.18
	[−0.49; 0.17]	[−0.51; 0.15]
Year	0.02*	0.01*
	[0.01; 0.02]	[0.01; 0.02]
GDP growth	−0.00	−0.00
	[−0.02; 0.02]	[−0.02; 0.02]
Class: Past (ref.: Future)	−1.65*	−1.71*
	[−1.92; −1.39]	[−2.47; −0.94]
Class: Present	−0.41*	−0.61*
	[−0.54; −0.28]	[−0.95; −0.27]
Inc. (2 cat.): Incumbent	0.24*	
	[0.07; 0.41]	
Inc. (2 cat.): Incumbent × Past	0.77*	
	[0.42; 1.12]	
Inc. (2 cat.): Incumbent × Present	0.40*	
	[0.21; 0.59]	
Inc. (4 cat.): Opposition		−0.12
		[−0.49; 0.25]
Inc. (4 cat.): Non-PM Incumbent		0.00
		[−0.41; 0.41]
Inc. (4 cat.): PM Incumbent		0.14
		[−0.25; 0.53]
Inc. (4 cat.): Opposition × Past		0.06
		[−0.75; 0.86]
Inc. (4 cat.): Non-PM Incumbent × Past		0.93*
		[0.07; 1.80]
Inc. (4 cat.): PM Incumbent × Past		0.81*
		[0.01; 1.61]
Inc. (4 cat.): Opposition × Present		0.23
		[−0.13; 0.59]
Inc. (4 cat.): Non-PM Incumbent × Present		0.62*
		[0.19; 1.04]
Inc. (4 cat.): PM Incumbent × Present		0.62*
		[0.26; 0.98]
R^2	0.20	0.20
Adj. R^2	0.19	0.19
Number of observations	1749	1749
RMSE	1.55	1.55
Number of clusters (Manifestos)	587	587

* 0 outside the confidence interval.

Note: 95% confidence intervals in parentheses. All models are linear regressions with robust standard errors clustered by manifesto. Model 1 reports the regression used to estimate fitted/expected values reported in the paper. Model 2 reruns the model with a more detailed classification of incumbency status. The models include country dummies which are omitted from the table.

E.2 Alternative Sentiment Dictionaries and Sentiment Aggregation

For the main part of the analysis, I follow the proportional aggregation formula of sentiment (Crabtree et al. 2020):

$$Sentiment_{prop} = 100 \times \frac{\sum Pos - \sum Neg}{\sum Words}, \tag{1}$$

where $\sum Pos$ is the sum of positive terms in a manifesto section, $\sum Neg$ is the sum of negative terms in the same manifesto section, and $\sum Words$ is the sum of all words in the manifesto section. Theoretically, the score can range from -100 (only negative terms in a manifesto section) to $+100$ (only positive terms), but the manifesto-level sentiment ranges from a minimum of -1.07 to a maximum of 7.69.

As a robustness check, I also apply the formula proposed by Proksch et al. (2019), which estimates sentiment as the logged ratio of the sum of positive ($\sum Pos$) and negative terms ($\sum Neg$):

$$Sentiment_{ratio} = log\left(\frac{\sum Pos + 0.5}{\sum Neg + 0.5}\right), \tag{2}$$

A value of 0 indicates that a document contains the same number of positive and negative terms, a value above 0 implies a larger number of positive words, relative to the sum of negative words.

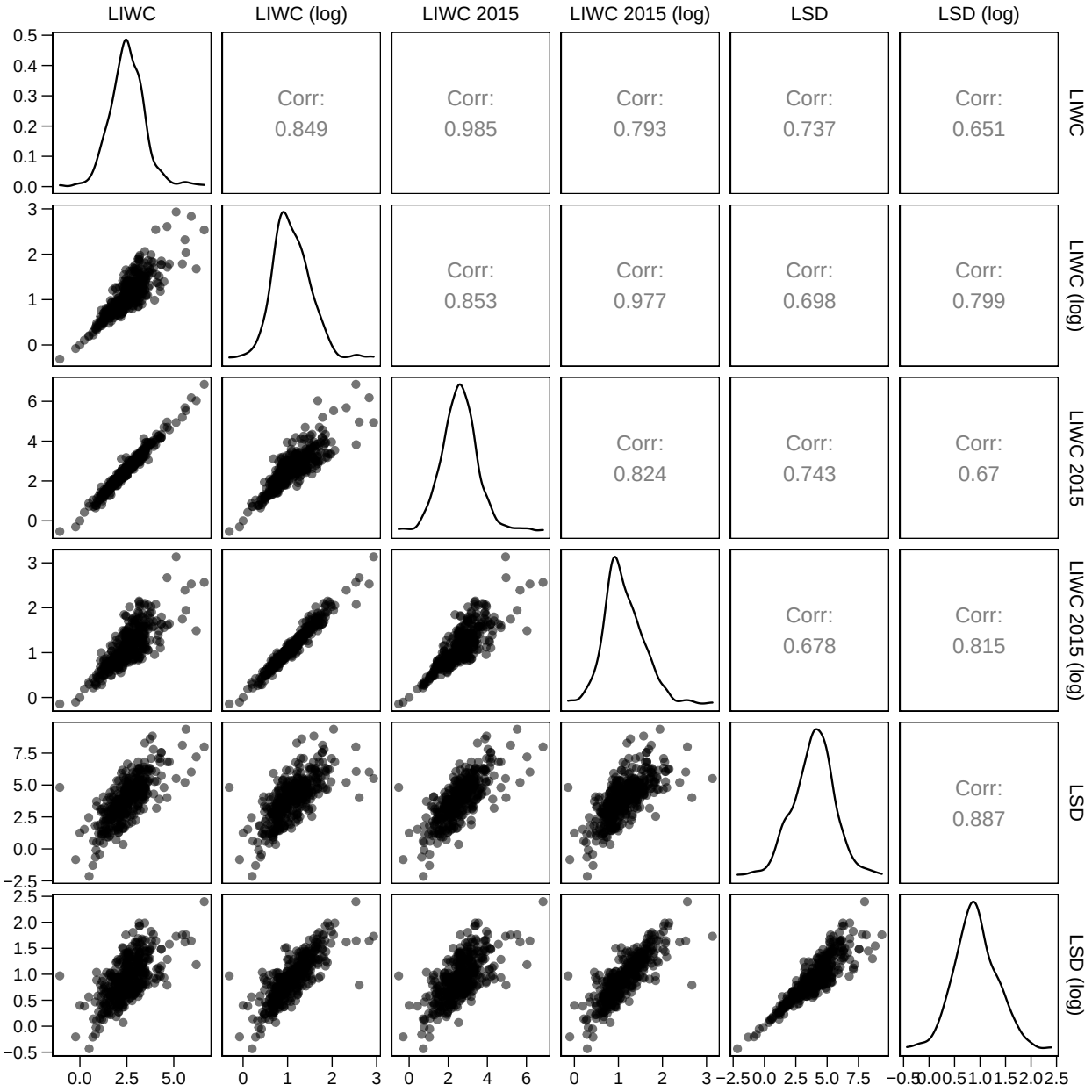
To make the results comparable to Crabtree et al. (2020), I choose the Linguistic Inquiry and Word Count (LIWC) dictionary (Tausczik and Pennebaker 2010) and the proportional aggregation as the main measure of sentiment. I also rerun all analyses with the logged ratio-based measure (Proksch et al. 2019) and alternative dictionaries: the Lexicoder Sentiment Dictionary, the 2015 version of the English LIWC, and a recently developed German sentiment dictionary by Christian Rauh (Rauh 2018) which combines two existing dictionaries. Note that negated forms are considered in the analysis and that the estimation detects multi-word expressions.

Figures A19 and A20 plot the correlations between different measures of sentiment on the level of the 621 manifestos included in the analysis. I applied three English dictionaries to all English documents (LIWC, LSD, LIWC 2015) and three German dictionaries to the German

manifestos (LIWC, the translated LSD, Rauh's sentiment dictionary). Moreover, I estimate manifesto-level sentiment for each of these dictionaries with the formulas recommended by Crabtree et al. (2020) and Proksch et al. (2019). The values between the dictionaries and aggregation methods correlate strongly.

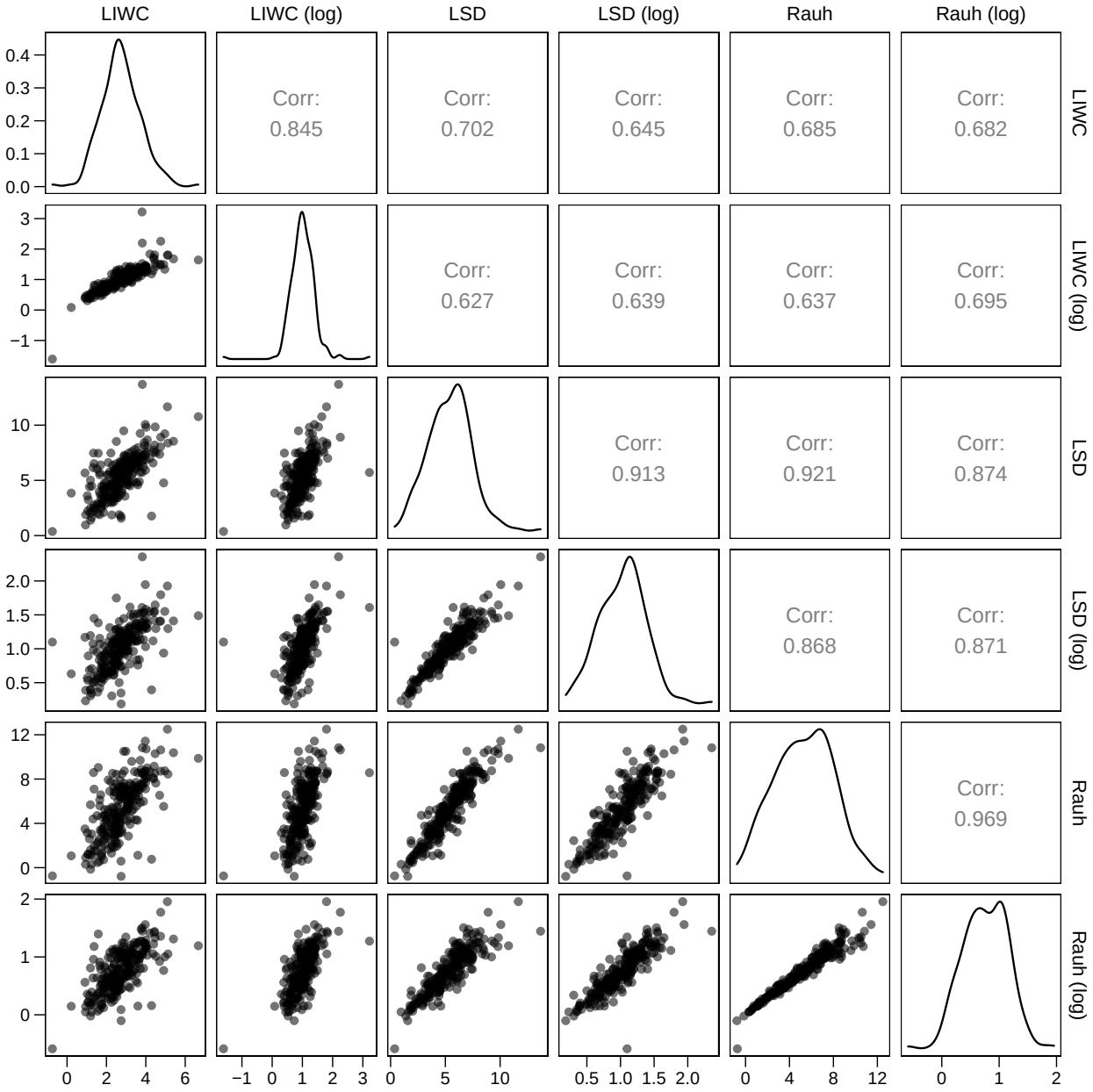
Figure A21 reruns the model used to produce Figure 2(a), but uses an alternative dictionary, the English and German Lexicoder Sentiment Dictionary (Proksch et al. 2019), and a logged aggregation method, described and validated extensively in Proksch et al. (2019), as dependent variables. Even though the expected values differ depending on the aggregation method and the dictionary (since the scales and number of words in the dictionaries vary substantively), the relative differences between incumbents and non-incumbents are virtually identical in all four scenarios. This is unsurprising and reassuring at the same time, given that the sentiment on the level of manifestos correlates highly across the dictionaries and aggregation methods. Overall, neither the choice of the sentiment dictionary nor the aggregation method influence the results.

Figure A19: Correlations between different English dictionaries and the sentiment aggregation methods



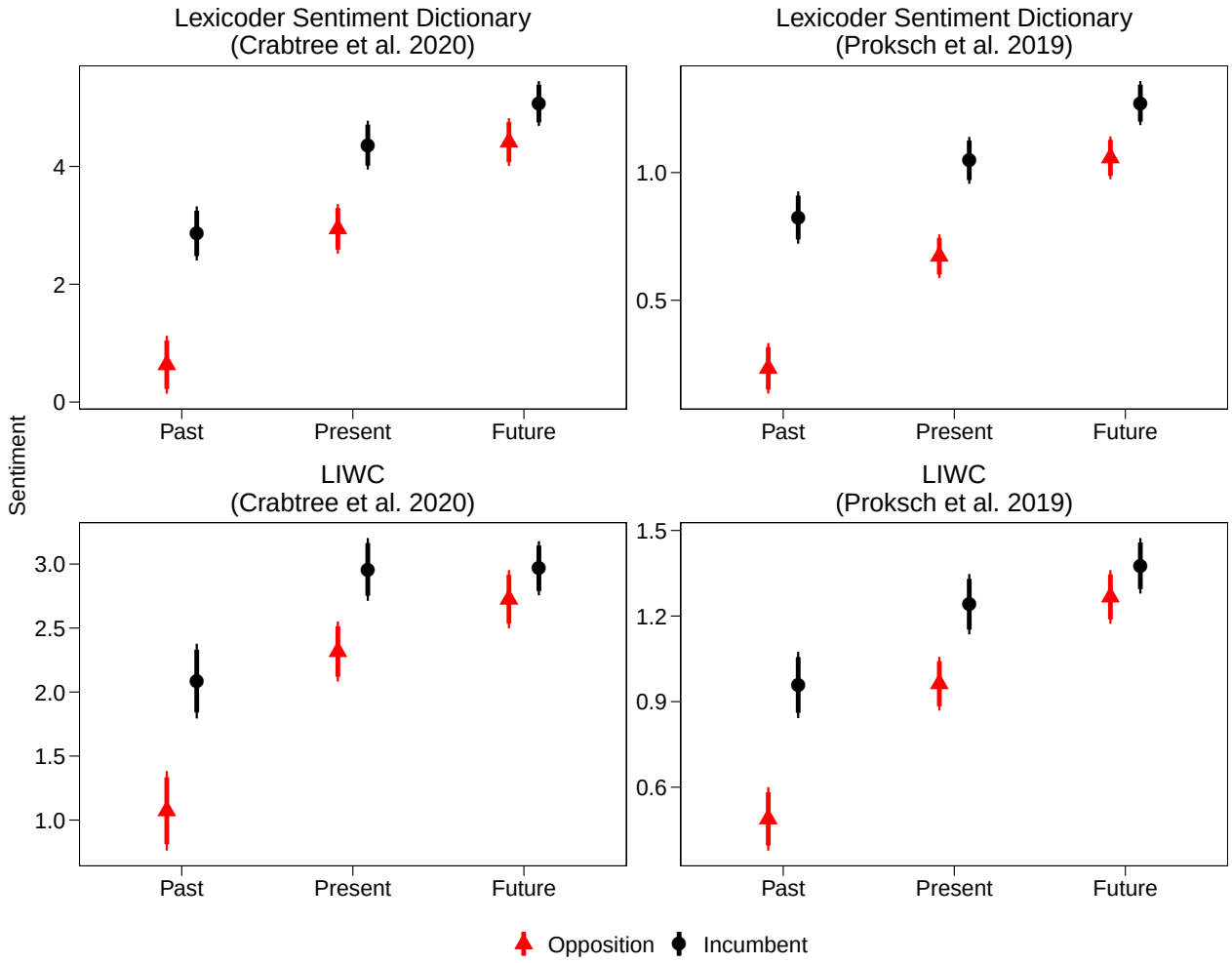
Note: 'Log' indicates that the formula proposed by Proksch et al. (2019) has been applied to the sentences.

Figure A20: Correlations between different German dictionaries and the sentiment aggregation methods



Note: 'Log' indicates that the formula proposed by Proksch et al. (2019) has been applied to the sentences.

Figure A21: Fitted/expected values of sentiment in statements on the past, present, and future, using different sentiment dictionaries and aggregation methods



Note: Table A14 shows the coefficients from all regression models used to estimate the fitted values. Note that the scale of the y-axis differs across the facets in order to show the relative differences between the point estimates within each dictionary and aggregation method. Errorbars indicate 90% (thick line) and 95% (thin line) confidence intervals.

Table A14: Sentiment in party manifestos (using different sentiment dictionaries and aggregation methods as dependent variables)

	M1 (LSD, log)	M2 (LSD)	M3 (LIWC, log)	M4 (LIWC)
(Intercept)	−2.48	−16.86	−9.23*	−27.26*
	[−6.18; 1.22]	[−34.19; 0.47]	[−13.00; −5.46]	[−37.15; −17.38]
Incumbent	0.21*	0.65*	0.11*	0.24*
	[0.15; 0.27]	[0.38; 0.93]	[0.04; 0.18]	[0.07; 0.41]
Class: Past (ref.: Future)	−0.82*	−3.78*	−0.78*	−1.65*
	[−0.90; −0.75]	[−4.18; −3.38]	[−0.86; −0.70]	[−1.92; −1.39]
Class: Present	−0.39*	−1.47*	−0.30*	−0.41*
	[−0.42; −0.35]	[−1.65; −1.29]	[−0.36; −0.25]	[−0.54; −0.28]
RILE	−1.39*	−4.26	−1.92*	−2.40
	[−2.76; −0.01]	[−11.21; 2.70]	[−3.42; −0.43]	[−6.22; 1.41]
$RILE^2$	−2.69*	−13.33*	−1.59*	−2.43
	[−4.09; −1.29]	[−20.24; −6.42]	[−3.16; −0.02]	[−6.08; 1.23]
Extremist party	−0.11	−0.43	−0.11*	−0.16
	[−0.21; 0.00]	[−1.02; 0.16]	[−0.22; −0.01]	[−0.49; 0.17]
Year	0.00	0.01*	0.01*	0.02*
	[−0.00; 0.00]	[0.00; 0.02]	[0.00; 0.01]	[0.01; 0.02]
GDP growth	0.00	0.01	0.01	−0.00
	[−0.00; 0.01]	[−0.03; 0.06]	[−0.00; 0.01]	[−0.02; 0.02]
Incumbent × Past	0.38*	1.58*	0.36*	0.77*
	[0.27; 0.48]	[1.06; 2.09]	[0.25; 0.47]	[0.42; 1.12]
Incumbent × Present	0.16*	0.77*	0.17*	0.40*
	[0.10; 0.22]	[0.52; 1.02]	[0.09; 0.25]	[0.21; 0.59]
R^2	0.41	0.36	0.30	0.20
Adj. R^2	0.40	0.36	0.29	0.19
Number of observations	1749	1749	1749	1749
RMSE	0.47	2.37	0.53	1.55
Number of clusters (Manifestos)	587	587	587	587

* 0 outside the confidence interval.

Note: 95% confidence intervals in parentheses. All models are linear regressions with robust standard errors clustered by manifesto. The models include country dummies which are omitted from the table.

E.3 Different Model Specifications

Table A15 reports the coefficients and confidence intervals for three model specifications. Model 1 includes country dummies and robust clustered standard errors for each manifesto (since each manifesto is included up to three times: sentiment in statements on the past, present, and future). Model 2 includes election fixed effects and robust clustered standard errors for parties. Model 3 reports the coefficients from a linear mixed-effects multilevel model with random intercepts for countries, elections, parties, and manifestos. The points estimates and confidence intervals are very similar across all three model specifications.

Figure A22 runs jackknife-style regressions by excluding one country from the dataset and rerunning the main model without this country. Each facet shows the fitted values of sentiment (using the LIWC dictionary and the aggregation method applied by Crabtree et al. (2020). We observe that no country substantively drives the differences between the temporal directions and the incumbents and non-incumbents. The distance between incumbents and non-incumbents in terms of prospective and retrospective (past and present) sentiment is largest when excluding Switzerland from the sample. This finding is plausible and speaks to the validity of the findings, since the government-opposition divide in Switzerland is very weak.

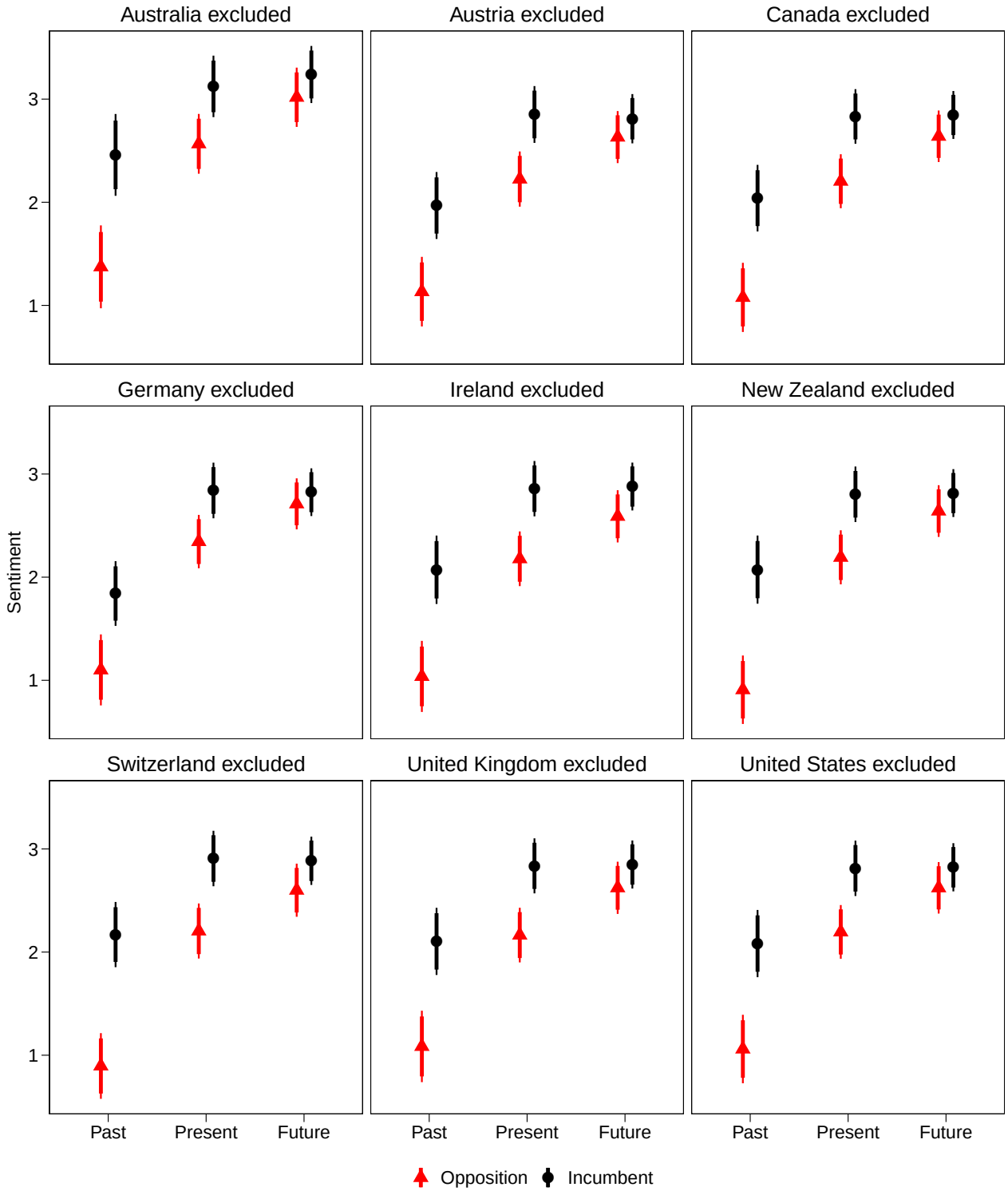
Table A15: Sentiment in party manifestos based on different model specifications (using the LIWC sentiment dictionary and the aggregation formula recommended by Crabtree et al. (2020) as dependent variable)

	Model 1	Model 2	Model 3
Incumbent	0.22*	0.28*	0.27
	[0.06; 0.37]	[0.08; 0.47]	[−0.00; 0.55]
Class: Past (ref.: Future)	−1.60*	−1.61*	−1.60*
	[−1.86; −1.34]	[−1.88; −1.33]	[−1.81; −1.39]
Class: Present	−0.42*	−0.42*	−0.42*
	[−0.55; −0.29]	[−0.54; −0.30]	[−0.63; −0.22]
Austria (ref.: Australia)	0.36*		
	[0.02; 0.69]		
Canada	0.14		
	[−0.23; 0.51]		
Germany	0.41*		
	[0.11; 0.71]		
Ireland	−0.35*		
	[−0.67; −0.03]		
New Zealand	0.56*		
	[0.20; 0.92]		
Switzerland	−0.00		
	[−0.38; 0.38]		
United Kingdom	0.02		
	[−0.26; 0.30]		
United States	0.39*		
	[0.06; 0.73]		
Incumbent × Past	0.80*	0.81*	0.81*
	[0.44; 1.17]	[0.39; 1.23]	[0.47; 1.14]
Incumbent × Present	0.41*	0.41*	0.41*
	[0.22; 0.60]	[0.22; 0.60]	[0.07; 0.75]
R^2	0.16	0.28	
Adj. R^2	0.15	0.21	
Num. obs.	1848	1848	1848
RMSE	1.64	1.58	
Number of clusters	621	106	
AIC			7009.79
BIC			7070.53
Log Likelihood			-3493.89
Num. groups: Manifesto			621
Num. groups: Election			150
Num. groups: Party			113
Num. groups: Country			9
Variance: Manifesto			0.25
Variance: Election			0.10
Variance: Party			0.23
Variance: Country			0.04
Variance: Residual			2.15

* 0 outside the confidence interval.

Note: 95% confidence intervals in parentheses. Model 1 includes country dummies and robust clustered standard errors for each manifesto. Model 2 includes election fixed effects and robust clustered standard errors for parties. Model 3 is a multilevel regression with country-, election-, party-, and manifesto-varying intercepts.

Figure A22: The influence of incumbency status on sentiment in statements on the past, present, and future, excluding one country in each model



Note: The regression specifications correspond to Model 1 of Table A13, but each facet reports expected values with one of the countries excluded from the sample. Errorbars indicate 90% (thick line) and 95% (thin line) confidence intervals.

E.4 Assessing Differences Between Incumbents and Opposition Parties in Terms of Sentiment

The expected values reported in the main paper and the Supporting Information reveal important information about the substantive levels of sentiment and show how sentiment by incumbents and opposition parties differs in statements about the past, present, and future. However, these analysis do not directly test whether differences in sentiment between incumbents and opposition parties in each class are different from 0.

In addition to the simulations reported in the main paper (Table A16 shows the underlying regression model), this section reports two additional first difference analyses.[10] First, I plots the densities of 1,000 first difference simulations per class (Figure A23) as well as the mean and confidence intervals of first difference simulations after excluding one country at a time (Figure A24). The difference between incumbents and opposition parties is always largest for statements on the future, followed by statements on the present. The first difference for statements on the past is between four and five times larger than the first difference for statements on the future. For statements on the future, the differences are not only substantively smaller, but for several subsets not statistically significant at conventional levels (Figure A24).

Second, I repeat the first difference analysis with different dictionaries and aggregation methods (see also SI Section E.2). Figure A25 reports the densities from simulated first differences. Figure A26 aggregates the simulations and reports the average first difference along with 90% and 95% confidence intervals. Although the scales on the x-axis differ due to different terms included in the dictionaries and different scales of the aggregated dictionary scores, the substantive differences stay the same and mirror the findings described above. We observe much larger differences in sentiment between opposition parties and incumbents in statements on the past, compared to statements on the future.

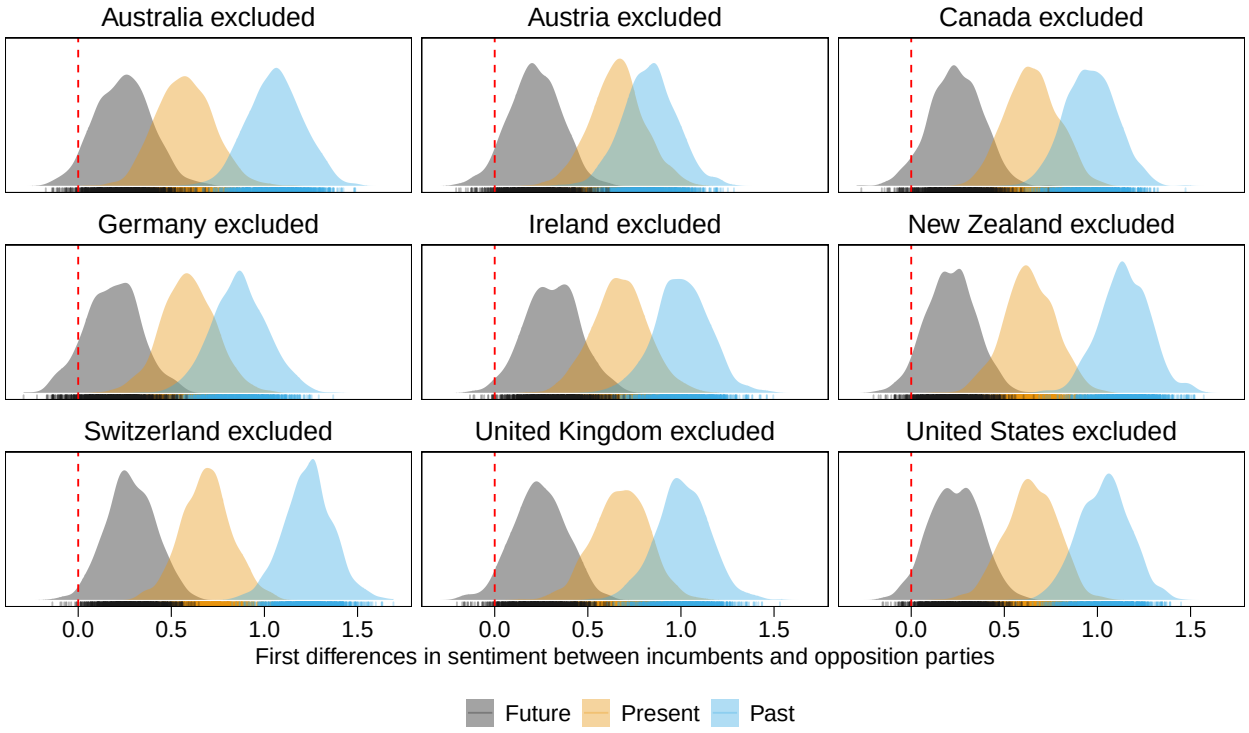
Figure A27 shows the results of pairwise post hoc comparisons of the differences in the sentiment between incumbents and opposition parties for sections on the past, present, and future. Negative values imply that opposition parties employ more negative sentiment than incumbents. The differences correspond very closely to the first differences. In statements on the past, the difference is large (–1.1) and decreases for statements on the past (–0.68). The

[10] The simulations of first differences were performed using the `Zelig` R package. See: https://zeligproject.org.

difference in sentiment is smallest for sentences on the future (–0.24).

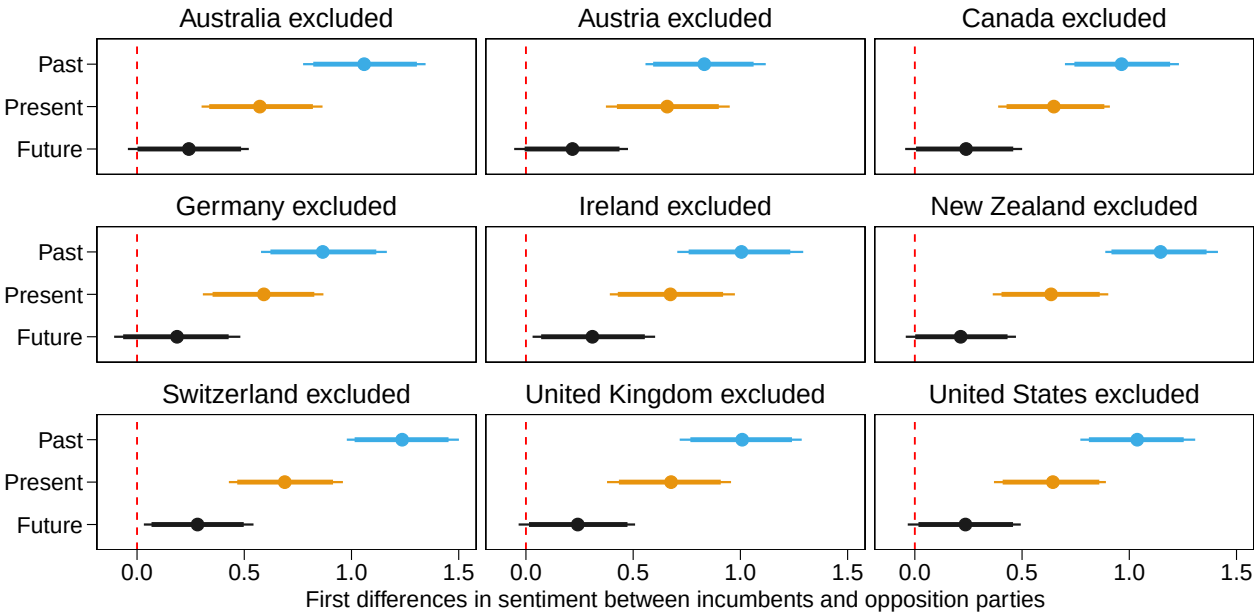
Finally, I report the results from separate regression models for each class (Table A17). This approach splits the sample into three equally sized datasets. The coefficient for *Incumbent* indicates the predicted difference in expressed sentiment between incumbents and opposition parties for each class (based on the formula applied by Crabtree et al. (2020) and the LIWC dictionary). Two findings are noteworthy. First, the coefficients for the difference in sections on the past (Model 1), present (Model 2), and future (Model 2) align with the averages of the first differences simulations (e.g., Figure 2(b)). Second, the confidence intervals are also very similar to the analysis of pairwise post hoc comparisons (Figure A27) and the simulated first differences. To sum up, the conclusions derived from the first difference approach persist when using alternative dictionaries, aggregation formulas, and additional methodological approaches.

Figure A23: The distribution of simulated first differences in sentiment in statements on the past, present, and future, using a jackknife-regression style approach that excludes one country at a time



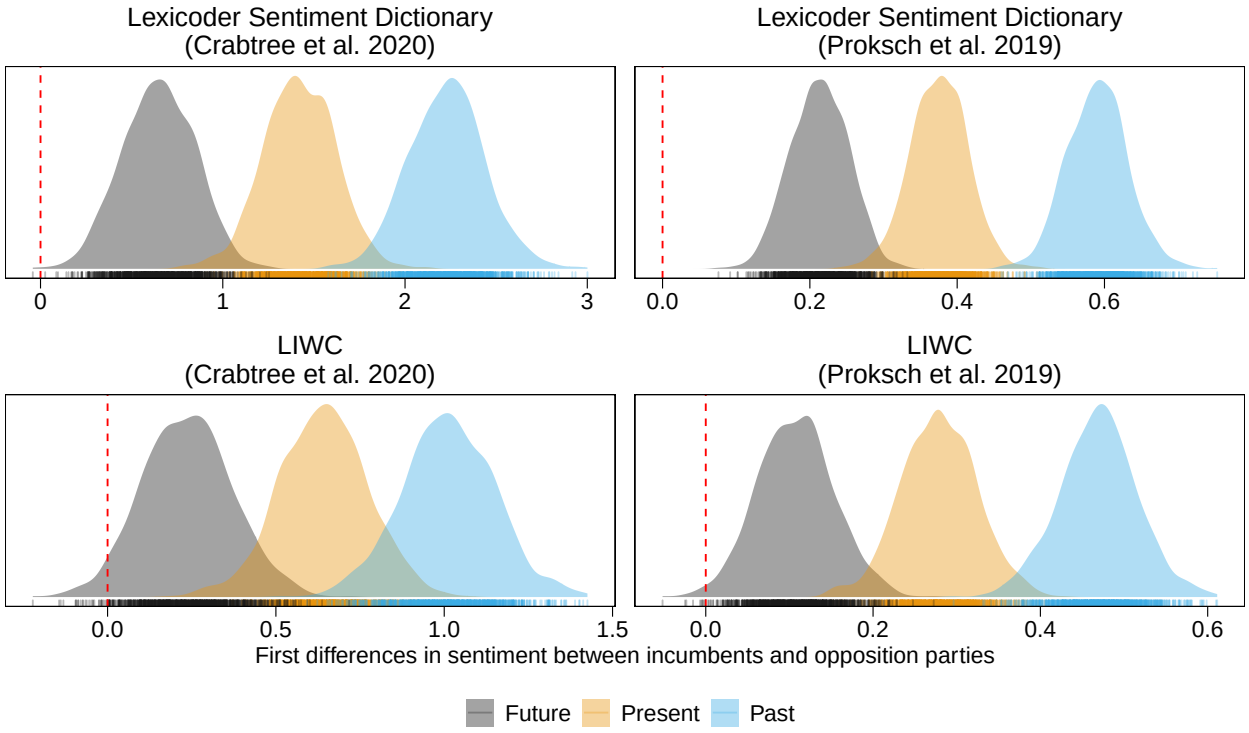
Note: Positive values imply that the incumbent parties employ more positive sentiment than opposition parties. The density curves each report 1,000 simulations of first differences (separately for each class and subset of countries).

Figure A24: First differences in sentiment in statements on the past, present, and future, using a jackknife-regression style approach that excludes one country at a time



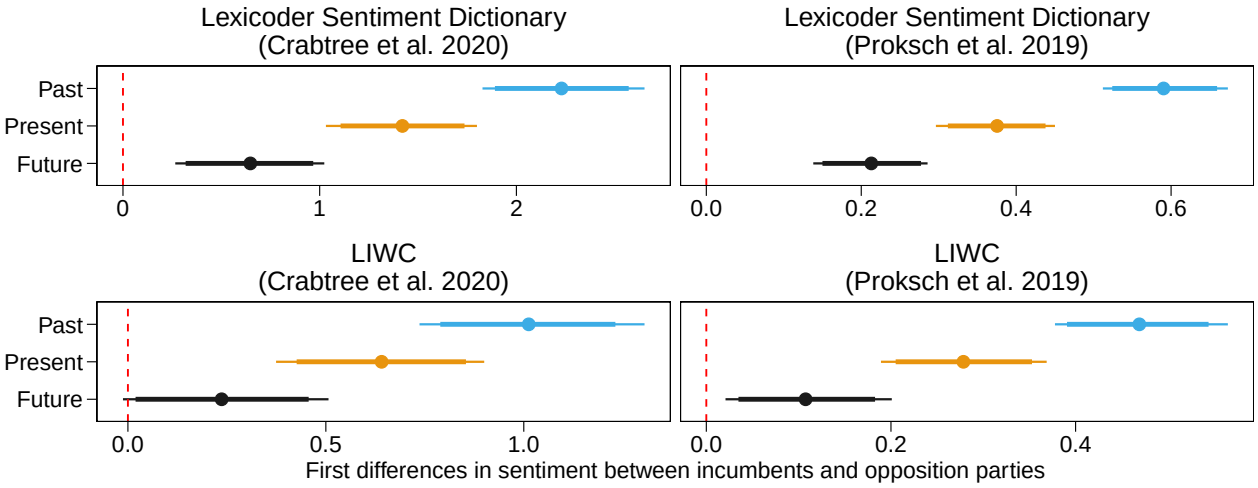
Note: Means and confidence intervals of the first differences are based on 1,000 simulations per class and dictionary/aggregation formula. Errorbars indicate 90% (thick line) and 95% (thin line) confidence intervals.

Figure A25: The distribution of simulated first differences in sentiment in statements on the past, present, and future, using different sentiment dictionaries and aggregation methods



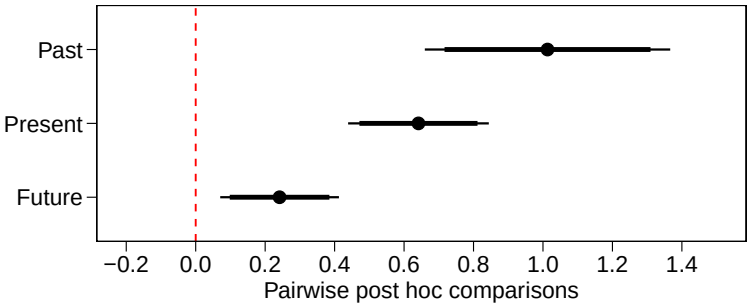
Note: Positive values imply that the incumbent parties employ more positive sentiment than opposition parties. The density curves each report 1,000 simulations of first differences (separately for each class and dictionary/aggregation formula).

Figure A26: First differences in sentiment in statements on the past, present, and future, using different sentiment dictionaries and aggregation methods



Note: Means and confidence intervals of the first differences are based on 1,000 simulations per class and dictionary/aggregation formula. Errorbars indicate 90% (thick line) and 95% (thin line) confidence intervals.

Figure A27: Pairwise post hoc comparisons based on the interaction between *Incumbent* and *Class*



Note: Positive values imply that incumbent parties employ more positive sentiment than incumbents. Estimates are based on The estimates are based on the interaction between incumbency status and the predicted class (Model 3 of Table A12). Errorbars indicate 90% (thick line) and 95% (thin line) confidence intervals.

Table A16: Predicting sentiment in party manifestos (using the LIWC sentiment dictionary and the aggregation formula recommended by Crabtree et al. (2020) as dependent variable)

	Model 1
(Intercept)	−27.23*
	[−36.48; −17.97]
Incumbent	0.24
	[−0.02; 0.51]
Class: Past (ref.: Future)	−1.65*
	[−1.88; −1.43]
Class: Present	−0.41*
	[−0.63; −0.18]
Country: Austria (ref.: Australia)	0.29
	[−0.01; 0.59]
Country: Canada	0.21
	[−0.13; 0.55]
Country: Germany	0.34*
	[0.05; 0.64]
Country: Ireland	−0.53*
	[−0.83; −0.23]
Country: New Zealand	0.40*
	[0.13; 0.68]
Country: Switzerland	−0.09
	[−0.37; 0.19]
Country: United Kingdom	−0.10
	[−0.40; 0.20]
Country: United States	0.32
	[−0.06; 0.70]
RILE	−0.00
	[−0.01; 0.00]
RILE^2	−0.00
	[−0.00; 0.00]
Extremist party	−0.16
	[−0.43; 0.10]
Year	0.02*
	[0.01; 0.02]
GDP growth	−0.00
	[−0.02; 0.02]
Incumbent × Past	0.77*
	[0.41; 1.14]
Incumbent × Present	0.40*
	[0.03; 0.77]
R^2	0.20
Adj. R^2	0.19
Number of observations	1749
RMSE	1.55

* 0 outside the confidence interval.

Note: The model reported in this table is used to simulate first differences. 95% confidence intervals in parentheses.

Table A17: Predicting sentiment in party manifestos separately for each temporal perspective (using the LIWC sentiment dictionary and the aggregation formula recommended by Crabtree et al. (2020) as dependent variable)

	Model 1 (Past)	Model 2 (Present)	Model 3 (Future)
Incumbent	1.08*	0.58*	0.22
	[0.57; 1.59]	[0.30; 0.86]	[−0.01; 0.44]
RILE	−2.73	0.74	−0.29
	[−8.48; 3.01]	[−2.36; 3.85]	[−2.59; 2.00]
RILE^2	0.85	−1.76	−2.15
	[−4.03; 5.72]	[−5.05; 1.52]	[−4.68; 0.39]
Extremist party	0.25	−0.54*	−0.18
	[−0.85; 1.35]	[−1.06; −0.02]	[−0.59; 0.23]
Year	0.01	0.02*	0.01*
	[−0.00; 0.02]	[0.01; 0.02]	[0.01; 0.02]
R^2	0.08	0.15	0.14
Adj. R^2	0.06	0.13	0.12
Number of observations	606	606	606
RMSE	2.33	1.19	0.95
Number of clusters (Parties)	104	104	104

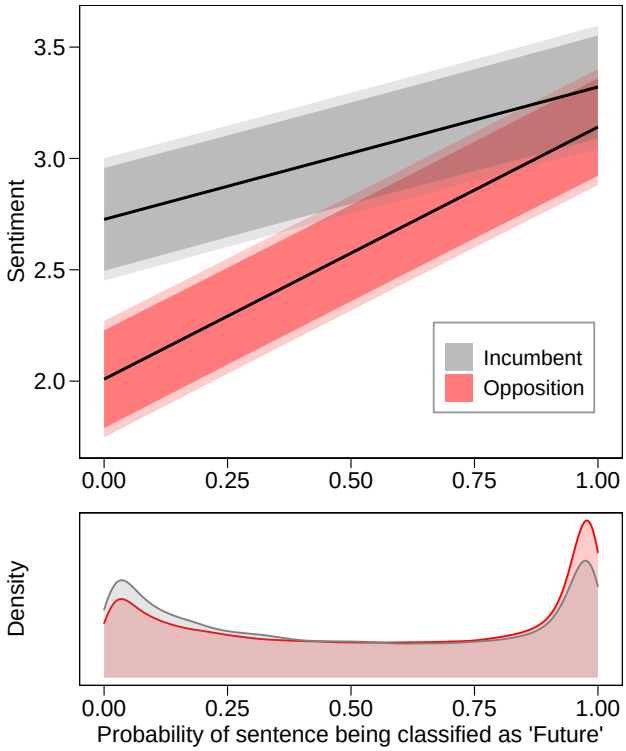
* 0 outside the confidence interval.

Note: 95% confidence intervals in parentheses. Model 1 filters the manifesto-observations of sentiment in sentences classified as past, Model 2 filters manifesto-observations of sentiment in sentences classified as present, Model 3 filters manifesto-observations of sentiment in sentences classified as future. All models are linear regressions with country-fixed effects and robust standard errors clustered by manifesto. Models only consider manifestos with at least one sentence devoted to the past, present, and future.

E.5 A Continuous Measure of Retrospective and Prospective Rhetoric

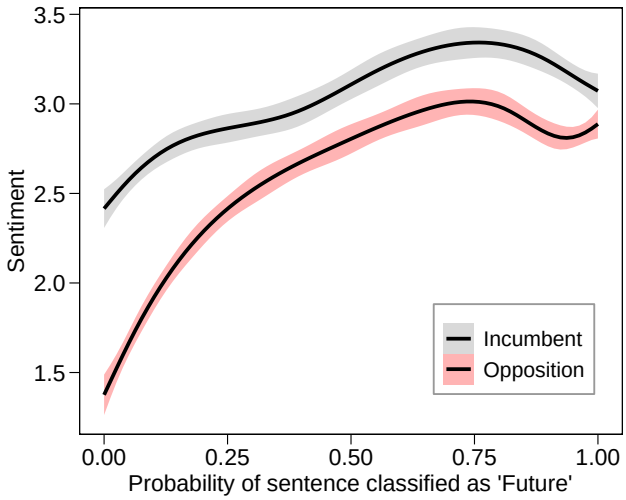
Possibly, not all sentences address only a single class and some sentences are more difficult to classify than others. Recall that the main analysis uses the class with the highest probability for a statement and then aggregates the sentiment for each class an manifesto. Retrospective and prospective rhetoric could also be measured on a continuous scale that takes into consideration uncertainty of the classification. In a further robustness test, I use the probability of a sentence being classified as 'future' as the measure of retrospective and prospective rhetoric. A value of 0 means that a sentence is almost certainly not addressing the future, whereas a value of 1 implies that the sentence is very likely about the future. I run a multilevel regression with random intercepts for countries, elections, parties and manifestos on the level of sentences and interact the continuous measure of prospective rhetoric with incumbency status. Figure A28 plots the expected values of sentiment of a sentence (using the LIWC sentiment dictionary). The interaction confirms the results from the analysis reported in the paper. On the one hand, when prospective rhetoric equals 0, differences in sentiment between incumbents and the opposition is largest. On the other hand, for sentences that almost certainly address the future the differences between incumbents and the opposition are much smaller and the confidence intervals overlap. Figure A29 repeats the analysis but plots the bivariate relationship between the continuous measure of prospective rhetoric and sentiment using a loess regression line in order to account for non-linear developments. The results do not change.

Figure A28: Sentiment conditional on incumbency status and a continuous measure of prospective rhetoric



Note: Expected values based on Model 2 in Table A18. Shaded areas indicate 90% (darker) and 95% (brighter shades) confidence intervals. The lower-hand plot shows the density distribution of the probability of a sentence being classified as 'future'.

Figure A29: Sentiment conditional on incumbency status and a continuous measure of prospective rhetoric



Note: The lines are loess regressions for incumbents and opposition parties. Shaded areas indicate 95% confidence intervals.

Table A18: Predicting sentiment in party manifestos on the level of sentences (using the LIWC sentiment dictionary and the aggregation formula recommended by Crabtree et al. (2020) as dependent variable)

	Model 1	Model 2
Incumbent	0.71*	0.72*
	[0.56; 0.86]	[0.57; 0.87]
Prob. 'Future'	1.13*	1.13*
	[1.05; 1.21]	[1.05; 1.22]
RILE	−50.02*	−48.82*
	[−95.70; −4.33]	[−95.62; −2.03]
$RILE^2$	−5.11	−6.49
	[−37.99; 27.76]	[−39.64; 26.67]
Year	0.01*	0.02*
	[0.01; 0.02]	[0.01; 0.02]
Incumbent × Prob. 'Future'	−0.54*	−0.54*
	[−0.66; −0.41]	[−0.66; −0.41]
GDP growth		0.00
		[−0.02; 0.02]
AIC	2567773.72	2529129.15
BIC	2567904.11	2529270.21
Log Likelihood	-1283874.86	-1264551.57
Num. obs.	386980	381081
Num. groups: Manifesto	621	587
Num. groups: Election	150	142
Num. groups: Party	113	105
Num. groups: Country	9	9
Variance: Manifesto	0.29	0.29
Variance: Election	0.04	0.04
Variance: Party	0.25	0.26
Variance: Country	0.09	0.10
Variance: Residual	44.47	44.53

* 0 outside the confidence interval.

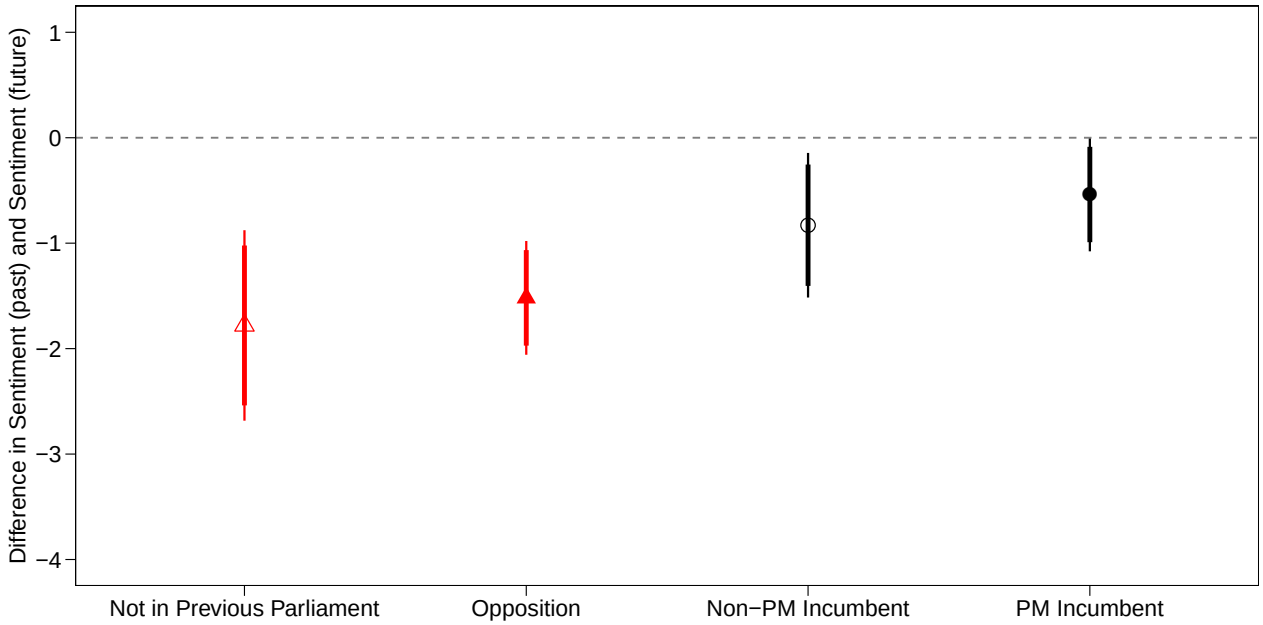
Note: Models are linear multilevel regressions with country-, election-, party-, and manifesto-varying intercepts. 95% confidence intervals in parentheses.

E.6 An Alternative Aggregation of Sentiment Differences in Statements on the Future and Past

In order to account explicitly for manifesto-specific factors (that might not be captured by fixed or random effects for each manifesto), I conceptualize the dependent variable as the difference between sentiment in sentences on the past and future. A value of 0 means that a party uses the exact same degree of sentiment in statements on the past and future. A negative value implies that sentiment in statements on the past are more negative than statements on the future. Thus, each manifesto is included only once in the regression model (not up to three times as in the main models). Table A19 shows the coefficients of the linear regressions. Model 1 uses the binary classification of incumbency and shows that the difference in sentiment between past and the future is significantly and substantively smaller for incumbents than for non-incumbents. Model 2 uses the four-fold classification of incumbency status.

The expected values for this variable are displayed in Figure A30. Again, we observe the expected relationships: parties not represented in parliament while publishing the manifesto show the largest difference, followed by opposition parties in parliament. The differences between the incumbent party of the president/prime minister and smaller coalition partners is the very small. Both types of government parties have a substantively smaller difference in these two manifesto sections relative to non-incumbents. Taken together, this robustness test shows that the results also hold when aggregating the dependent variable to only one observation per manifesto.

Figure A30: Differences in sentiment in statements on the past and statements on the future (calculated for each manifesto)



Note: Negative values imply that a party uses more negative sentiment in sentences on the past, relative to the sentences on the future in the same manifesto. Expected values based on Model 2 in Table A19. Errorbars indicate 90% (thick line) and 95% (thin line) confidence intervals.

Table A19: Predicting the difference in sentiment between statements on the past and on the future in each party manifesto (using the LIWC sentiment dictionary and the aggregation formula recommended by Crabtree et al. (2020) as dependent variable)

	Model 1	Model 2
(Intercept)	−5.60	−7.89
	[−30.06; 18.86]	[−32.79; 17.01]
RILE	−3.62	−3.61
	[−7.72; 0.47]	[−7.71; 0.48]
$RILE^2$	2.69	2.80
	[−1.43; 6.80]	[−1.27; 6.87]
Extremist party	0.48	0.52
	[−0.44; 1.40]	[−0.40; 1.43]
Year	0.00	0.00
	[−0.01; 0.01]	[−0.01; 0.02]
GDP growth	−0.01	−0.01
	[−0.07; 0.04]	[−0.06; 0.04]
Inc. (2 cat.): Incumbent (ref.: Opposition)	0.85*	
	[0.51; 1.20]	
Inc. (4 cat.): Opposition (ref.: Not in Previous Parliament)		0.26
		[−0.58; 1.10]
Inc. (4 cat.): Non-PM Incumbent		0.95*
		[0.04; 1.86]
Inc. (4 cat.): PM Incumbent		1.24*
		[0.44; 2.04]
R^2	0.06	0.07
Adj. R^2	0.04	0.04
Number of observations	575	575
RMSE	2.23	2.23
Number of clusters (Elections)	142	142

* 0 outside the confidence interval.

Note: 95% confidence intervals in parentheses. Model 1 uses a binary classification of incumbency, Model 2 applies a more detailed classification. All models are linear regressions with robust standard errors clustered by manifesto. The models include country dummies which are omitted from the table.

E.7 Most Frequent Positive and Negative Words in Each Class

One potential explanation for the observed differences could be that the typical negative and positive terms differ across classes. Thus, results might be affected by the class itself, not incumbency status. Yet, this is a rather explanation. for the findings. If words and not incumbency status drive the results, we should observe very similar sentiment scores across all three classes (possibly with different levels of sentiment). The results in the paper and the Supporting Information, however, show that the difference decreases markedly in statements on the future. As an additional robustness tests, I retrieve the most frequent negative and positive terms from the English and German Lexicoder Sentiment Dictionaries which were explicitly developed for political text (Young and Soroka 2012; Proksch et al. 2019). Figures A31 and A32 plot the 20 most frequent terms in each class. Overall, we observe a high correspondence across the three classes which does not suggest structural biases between the classes drive the observed differences.

Figure A31: The 20 most frequent negative and positive terms in each class across English manifestos

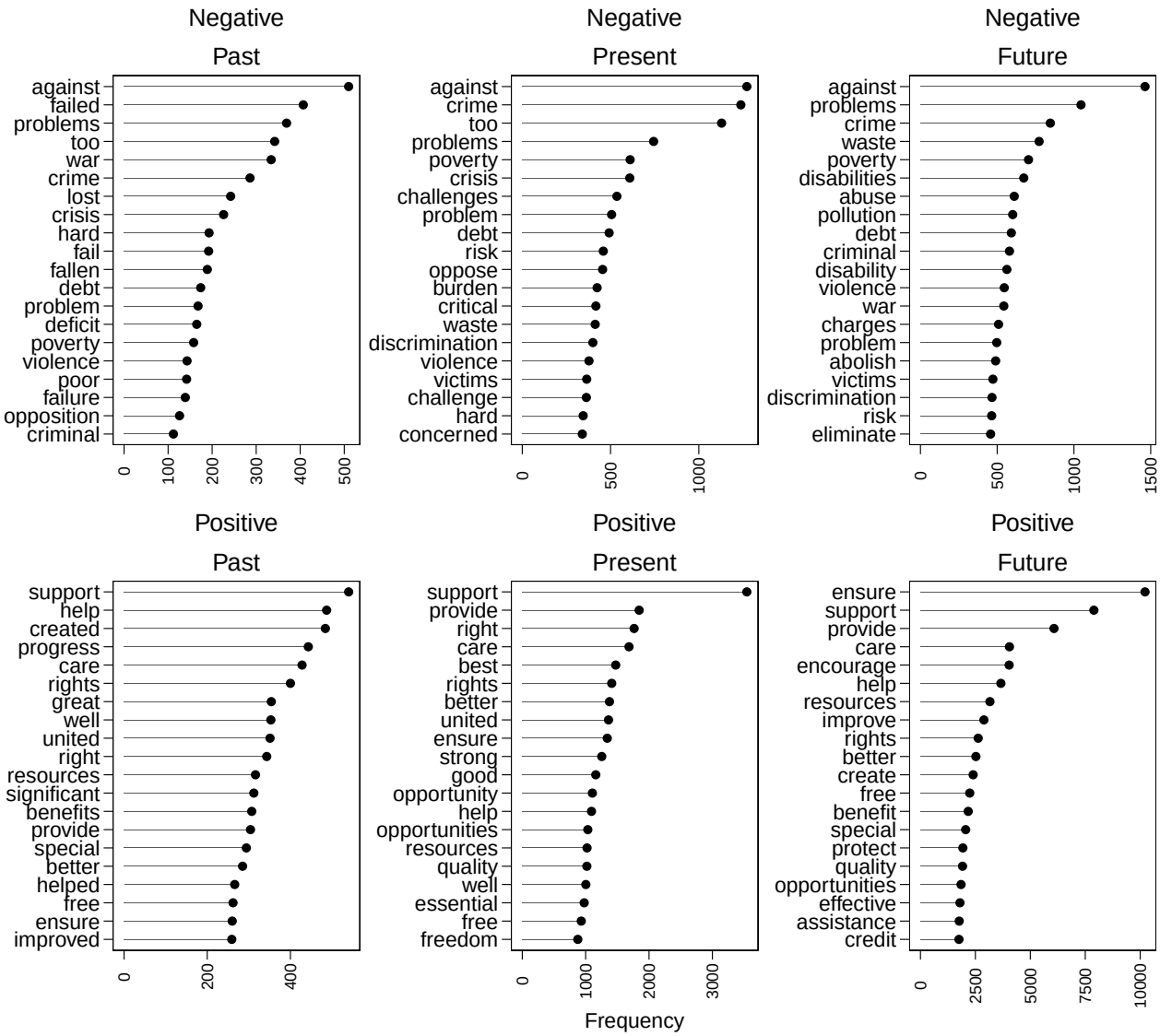
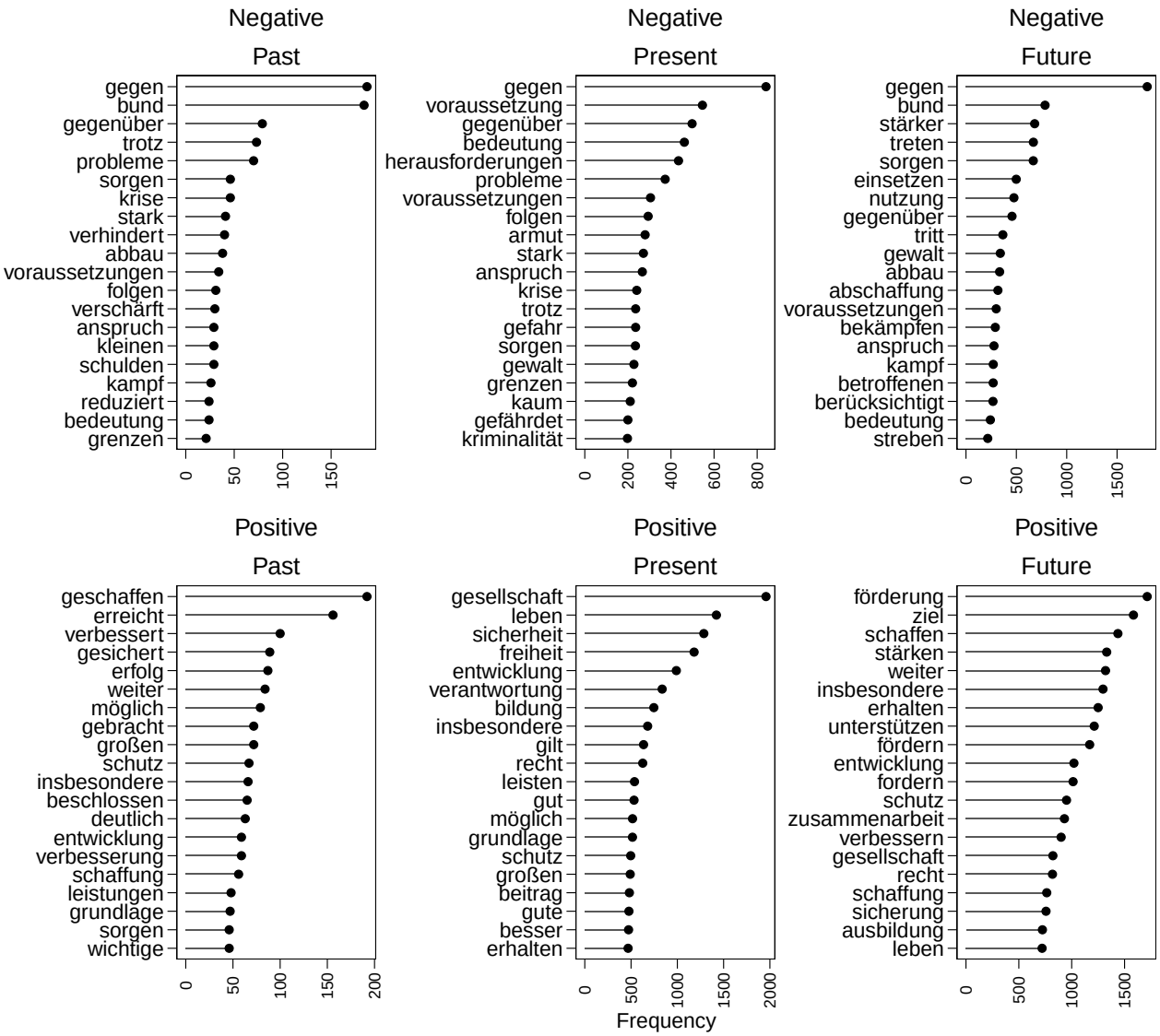


Figure A32: The 20 most frequent negative and positive terms in each class across German manifestos



F The Temporal Focus of Parties' Rhetoric: Moving Beyond Party Manifestos

Even though the paper considers manifestos from nine countries over a period of up to 60 years, questions about the generalizability of retrospective and prospective rhetoric remain. For instance, we might wonder whether retrospective and prospective rhetoric appear in all campaign materials and other areas of party competition or only in manifestos. First, as the Supporting Information in Crabtree et al. (2020) explain in detail, the difference in sentiment between incumbents and non-incumbents does not only occur in manifestos but also in televised leader's debates, party election broadcasts, and party websites. In order to test the prevalence of retrospective and prospective campaign communication in other channels, I analyze 16 years of budget debates between incumbents and opposition parties in Ireland, as well as a human coded televised leaders' debate.

F.1 Parliamentary Budget Debates

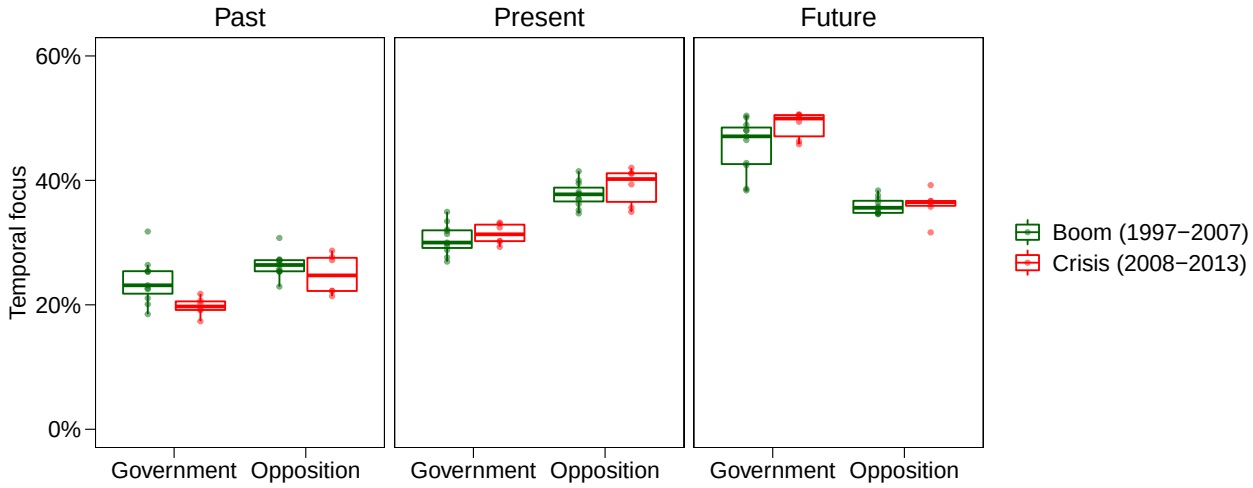
Budget debates in parliaments are another political event where we should observe both prospective and retrospective communication, as well as differences in sentiment in each class depending on the incumbency status and external circumstances. Parliamentary speeches on the annual budget are among the most important and most 'visible' parliamentary activities in many democracies. Herzog and Benoit (2015) analyze speaker selection in Irish budget debates in times of economic booms and crisis. Proksch et al. (2019) use the same text corpus and show differences in sentiment between government and opposition parties in these debates. I expect that budget debates contain substantive emphasis of the past, present, and future. Parties need to praise or criticize what has happened, outline the current situation of the country, and evaluate how the country would benefit or suffer from the proposed budget. I create a text corpus of all budget debates in the Dáil Éireann (the Irish lower house) from 1997 to 2013. Until around 2007, Ireland experienced a massive economic upturn, the so called 'Celtic Tiger boom' (see extensively Herzog and Benoit (2015)). Afterwards, Ireland was hit very hard by the financial crisis and officially entered an economic recession in 2008. We would expect more positive sentiment in statements on the past and present in budgets for the years from 1997 to

2007 compared to the crisis years, especially for government parties.

First, I reshape the corpus to the level of sentences, resulting in 94,821 observations. Then, I apply the SVM classifier trained on the English party manifestos to each sentence and assign the class with the highest probability to each sentence. Since the source of texts from the test and training sets differ (manifestos and speeches), the results should be taken with a grain of salt, even though I do not expect any systematic measurement error. In a second step, I apply the Lexicoder Sentiment Dictionary to the corpus and apply the logged sentiment aggregation for each speech and class.[11]

First, Figure A33 shows the proportions of sentences on the past, present, and future for the speeches from government and opposition parties in each each year. First, we observe quite similar proportions as in manifestos. Around 50% of sentence by government parties relate to the future. The opposition devotes, on average, only around 40% of their future. The emphasis on the past ranges between 20% and 30%. We certainly observe variation in prospective and retrospective communication in parliamentary speech.

Figure A33: The proportion of sentences on the past, present, and future in Irish budget debates



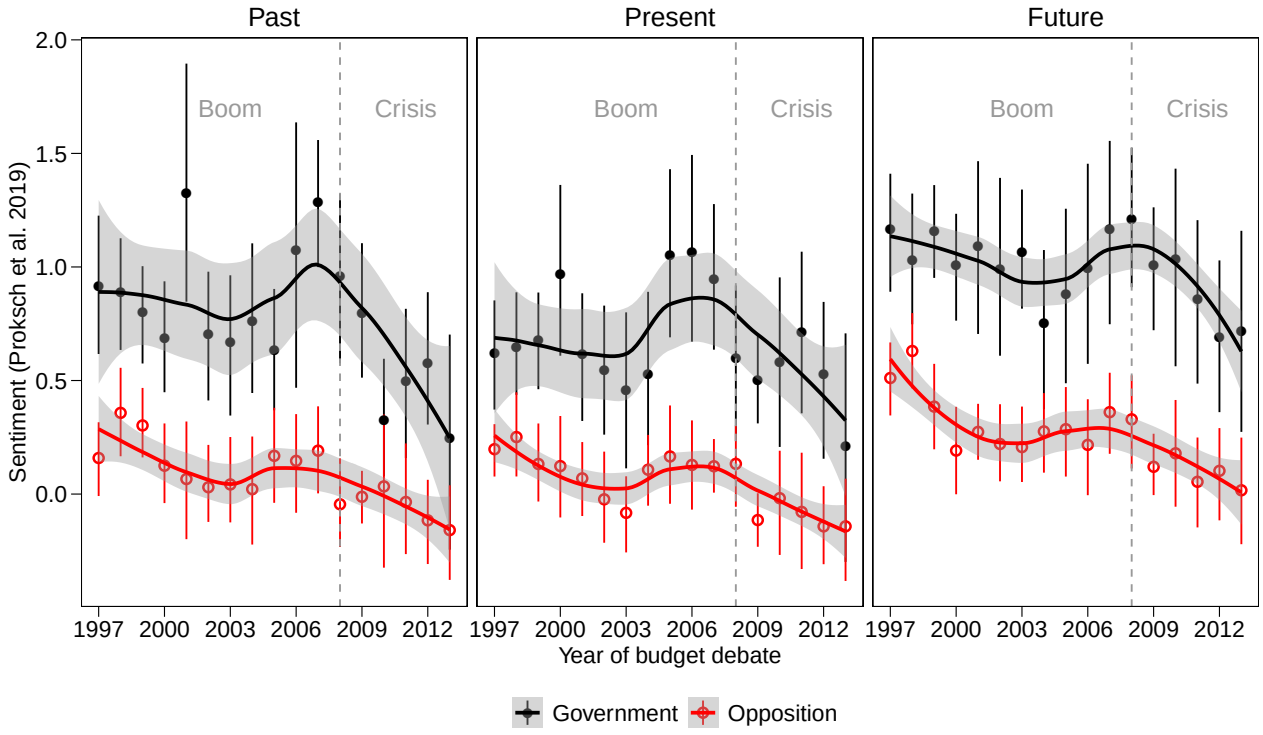
Note: Each dot shows the proportion by all speeches by the government/opposition in one budget debate.

Do we also observe differences and changes in sentiment? Figure A34 plots the average sentiment for government and opposition parties for each year and class, along with 95% bootstrapped confidence intervals and a loess regression line. The plot reveals that speakers from government parties use more positive sentiment in all three classes. The opposition

[11] I opt for the Lexicoder Sentiment Dictionary and the logged aggregation in order to make the results comparable to existing findings (Proksch et al. 2019).

parties are more negative in all three classes. Moreover, opposition parties' sentiment in the three classes is extremely similar, which speaks to the validity of the findings. Usually, the opposition does not only criticise the past and present situation, but also the budget (since the details of the budget are out of the opposition's control). The results from Figure A34 mirror this assumption. Moreover, we observe that the government became much less positive when the country was hit by the financial crisis. Especially the difference in sentiment in statements on the past and present became much more similar to sentiment by the opposition since 2008. In future-related statements we observe rather parallel trends between the government and the opposition. These findings underscore that parliamentary debates contain substantive elements of retrospective communication. Patterns in speeches correspond closely to the findings from manifestos.

Figure A34: Sentiment in statements on the past, present, and future in Irish budget debates



Note: The dashed vertical bar differentiates between the boom years (1997–2007) and crisis years (2008–2013). Vertical bars indicate 95% bootstrapped confidence intervals.

F.2 Televised Leaders' Debate

Moreover, I analyze the focus on the past, present, and future along with the sentiment during a televised leaders' debate. The argument of the paper states that parties focus strategically

on the past, present, and future in order to convince retrospective and prospective voters.

In 2013, the German incumbent chancellor Angela Merkel of the Christian Democracts (CDU/CSU) faced Peer Steinbrück, the leader of the Social Democrats (SPD). The debate in 2013 appears to be most suitable for the analysis of retrospective and prospective communication. Between 2009 and 2013, a coalition between CDU/CSU and the FDP was in power. The SPD was in opposition and the CDU/CSU was the largest government party. In contrast to the debates in 2009 and 2017, which also consisted of the CDU/CSU and SPD party leaders, we observed a clear government-opposition divide in 2013 since the cycles from 2005 to 2009 and 2013 to 2017 were 'grand coalitions' between the CDU/CSU and the SPD.

If the expectations and findings of the paper hold, we should observe substantive emphasis on the past, present, and the future, as well as differences in sentiment in these three classes depending on incumbency status. I use the content analysis of the televised debates, provided by the German National Election Study (for details on the content analysis see Rattinger et al. 2018). Each statement by each candidate was coded in terms of the temporal direction of the statement (past, present, future). Moreover, each statement was coded in terms of sentiment (positive, negative, neutral). The analysis does not use the supervised classification developed for this paper, but relies on an entirely human-coded text corpus.

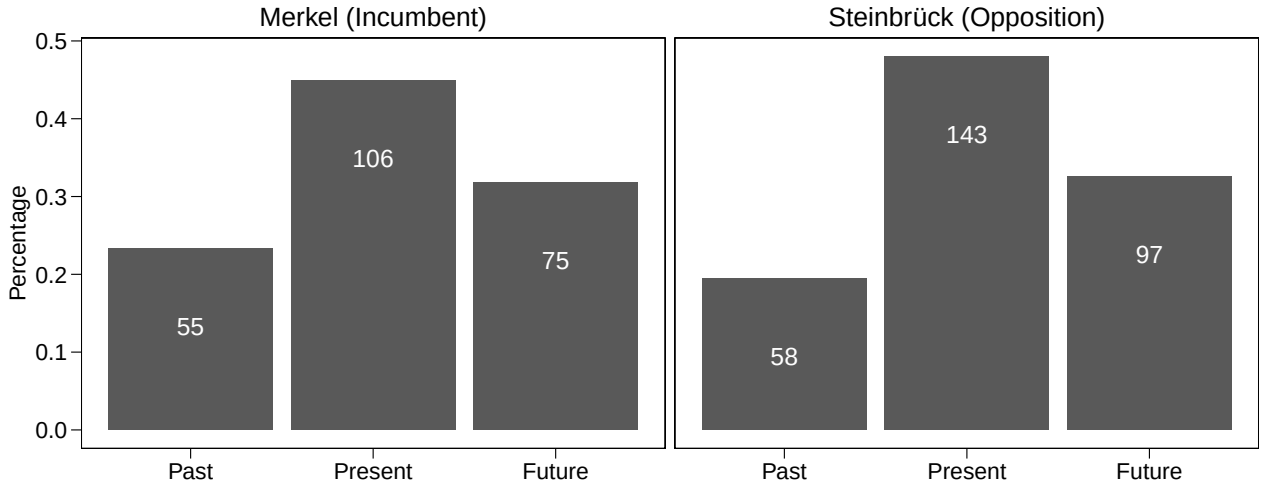
Figure A35 lists the proportions of statements about the past, present, and future. First, we observe that both speakers address all three times extensively. Chancellor Angela Merkel devoted around 23% of statements to the past, 45% to the present, and 31% to the future. Her opponent Peer Steinbrück has a similar emphasis on the past (20%), present (48%), and future (32%). Thus, both candidates did not only address future policy, but also evaluated the current situation and past developments.

Figure A36 investigates the sentiment expressed by both candidates.[12] The plot shows the percentage of positive, negative, and neutral statements in the three classes. The proportions for each class and speaker add up to one. Looking at the left-hand panel of Figure A36, 50% of Steinbrück's statements on the past were negative, 46% were neutral and only 4% were

[12] I use the varible `v28` which describes the 'social situation' and corresponds very closely to positive and negative sentiment. The codebook states: "When describing the political situation, a distinction must be made between positive and negative impressions of the statement. A positive impression is given when hope or optimism is spread or a positive fact is highlighted. A negative impression is given when critical facts are highlighted or threatening developments are described." (own translation)

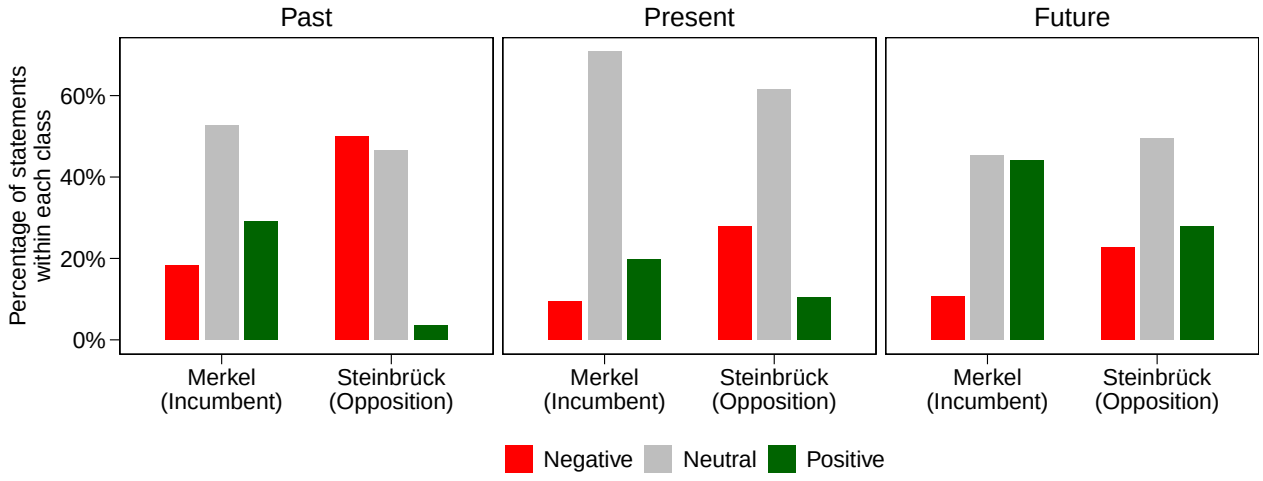
positive. Merkel made much more positive statements (20%) and far fewer negative ones (18%). Steinbrück, however, made much more positive statements on the present and future, compared to his rhetoric on the past. Merkel's sentiment on the past and future differs less strongly. This evidence corresponds precisely to the findings from the manifesto analysis: all parties make prospective and retrospective statements, but the tone in these statements depends on the incumbency status.

Figure A35: The proportions and absolute number of statements on the past, present, and future in the 2013 German televised leaders' debate



Note: The proportions are based on a manual content analysis of the 2013 German televised debate. The numbers in each bar list the absolute number of statements.

Figure A36: Sentiment in statements on the past, present, and future in the 2013 German televised leaders' debate



Note: The proportions are based on a manual content analysis of the 2013 German televised debate.

G Coding Instructions

G.1 Coding Instructions for Crowd Workers

Note: The following instructions have been presented to every person interested in participating in the coding task.

Overview

This task involves reading sentences from political texts and judging whether the statement relates to the past, present situation, the future, or whether the statement contains an election promise (pledge). The sentences you will be asked about come from political party manifestos.

For the sentence highlighted in red, enter your best judgment about the temporal coverage. If you are not entirely sure about the context of the highlighted sentence, read the surrounding sentences as well. Yet, your judgment should focus on the sentence in red font. Below we define the categories and provide examples.

1. What is the temporal direction of a statement?

a) **Statements about the past** describe achievements, criticisms or facts that have happened in the past.

Examples:

- "The government has neglected to invest substantial resources to ensure that the country has major international connectivity capacity."
- "We have reduced waiting times for the collection of IDs and turnaround time for social grant applications."

b) **Statements about the present** situation describe, criticise or praise the current situation.

Examples:

- "In our democratic country, women's voices are heard and women's issues are seriously addressed."

- "We are in living in a time of high unemployment and poverty."

c) **An election promise** is a statement about the future that commits a party to one specific action or outcome. This outcome or action can be clearly determined to have occurred or not.

Examples:

- "We will set aside 1 percent of GNP to provide for future pension obligations."
- "We will establish a new National Development Finance Agency."
- "The party will work to achieve the situation where 80 percent of taxpayers pay only the standard tax rate."

If one could equally strongly argue that a clear action or outcome is promised, then you should not code the statement as a pledge.

d) **Statements about the future** describe actions or situations that might or will happen. In contrast to election promises, statements about the future do not outline a clear policy goal or outcome that a party commits itself to.

- "In the future we will stay committed to environmental protection." (This statement is about the future, but does not promise a concrete action or outcome.)
- "Middle-class workers will continue to form the basis of our economy." (The sentence is a description of the future. There is no concrete policy-action to be taken and promised.)

2. Ambiguous statements

Sometimes, a statement could belong to two categories (for example if it describes both the past and the present). If this is the case, please indicate that the statement could be classified into a second category and specify the temporal coverage.

G.2 Coding Instructions for Research Assistants

Note: The following instructions have been presented to the two research assistants who coded an additional set of 3,000 sentences (1,500 sentences per person).

Overview

This task involves reading sentences from political texts and judging whether the statement relates to the past, present situation, or the future. The sentences you will be asked about come from political party manifestos.

For the sentence highlighted in red, enter your best judgment about the temporal coverage. If you are not entirely sure about the context of the highlighted sentence, read the surrounding sentences as well. Yet, your judgment should focus on the sentence in red font. Below we define the categories and provide examples.

1. What is the temporal direction of a statement?

a) **Statements about the past** describe achievements, criticisms or facts that have happened in the past.

Examples:

- "The government has neglected to invest substantial resources to ensure that the country has major international connectivity capacity."
- "We have reduced waiting times for the collection of IDs and turnaround time for social grant applications."

b) **Statements about the present** situation describe, criticise or praise the current situation.

Examples:

- "In our democratic country, women's voices are heard and women's issues are seriously addressed."
- "We are in living in a time of high unemployment and poverty."

d) **Statements about the future or election promises** describe actions or situations about the future. These sentences might outline the future or contain an election promise, i.e. a clear policy goal or outcome that the party commits itself to.

Examples:

- "We will set aside 1 percent of GNP to provide for future pension obligations."
- "The party will work to achieve the situation where 80 percent of taxpayers pay only the standard tax rate."
- "In the future we will stay committed to environmental protection." (This statement is about the future, but does not promise a concrete action or outcome.)
- "Middle-class workers will continue to form the basis of our economy." (The sentence is a description of the future. There is no concrete policy-action to be taken and promised.)

2. The Temporal Direction of Sentences about the Present

If you code a sentence as 'present', also indicate whether the sentence might refer (weakly or strongly) to the future or to the past. If the sentence is solely about the present situation, proceed with coding the next sentence.

3. Ambiguous statements

Sometimes, a statement could belong to two categories (for example if it describes both the past and the present). If this is the case, please indicate that the statement could be classified into a second category and specify the temporal coverage.