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Intra-Party Preference Heterogeneity and Faction Membership in the 15th German Bundestag: A Computational Text Analysis of Parliamentary Speeches

JULIAN BERNAUER and THOMAS BRÄUNINGER

In a broad range of research in comparative politics, political parties are conceptualised as unitary actors with consistent preferences. We depart from this sometimes accurate, at other times overly strong assumption by studying patterns of intra-party heterogeneity of preferences within parliamentary parties in the German Bundestag from 2002–05. For this purpose, we use the Word-scores method, a form of computational text analysis, to estimate policy positions of 453 individual legislators based on plenary speeches. We then study the link between intra-party faction membership and expressed policy positions. We find that there is a limited, but consistent effect of intra-party factionalism in the German Bundestag. According to random effects ANOVA, faction membership determines about 3 per cent of the variance of positions on economic policy in the present study.

INTRODUCTION

On 4 November 2008, the then opposition leader in the state parliament of Hesse, Social Democrat Andrea Ypsilanti (SPD) was scheduled to be elected prime minister. The election was meant to be the splendid end of several months of protracted coalition negotiations between the Social Democrats and the Green Party following the defeat of the Christian Democratic government of Prime Minister Roland Koch (CDU) at the elections of 27 January 2008. The right wing of the SPD, however, opposed Ypsilanti's plan to let the post-communist Left Party tolerate her minority coalition government with the Green Party. Given that she needed 56 of the three parties' cumulated 57 votes to get elected and given that one Social Democratic member of parliament openly declared an intention not to support the minority government, the hidden opposition of the right wing within the SPD became a major hurdle for government formation. In the end, party discipline could not balance party heterogeneity. A single day prior to Ypsilanti's election, three more right-wing Social Democratic MPs publicly announced their unwillingness to elect Ypsilanti as prime minister.

Several months earlier, Christian Democrats and Greens in Hamburg had agreed to form the first Conservative–Green government at the state level. Here, coalition formation was also preceded by fierce intra-party controversies, this time between the left- and the right-wing faction within the Green party, so-called 'Linke' and

'Realos'. In this case, however, the divergence of intra-party preferences was not fundamental and in the end the 'office to shape policy' argument prevailed.

These two events remind us that although in parliamentary democracies parties most often behave in a disciplined or cohesive way, preference heterogeneity can at times be significant, and carrot-and-stick systems to enforce party discipline in the absence of preference cohesion fail. Generalising from such events, this paper explores the nature of intra-party factions in German parties. We consider intra-party groups to be 'factions' if they possess a minimum of organisation, exhibit a common group consciousness, exist for a certain period of time, and actively pursue policy-, personal-, or group-specific political goals.¹ Factions can be threats to political stability but they are also a means of integrating a wide range of political ideas and a multitude of societal groups under one party umbrella. In this paper, we study the link between faction membership of individual members of the German Bundestag and their policy positions as expressed in plenary speeches in parliament. In companion papers, we explore the link between election modes and MPs' policy positions, and the impact of factionalism on coalition formation in Germany. Here, we do not deal with the wider consequences or sources of factionalism.

The empirical analysis is confined to the 15th German Bundestag that first met on 17 October 2002, and dissolved early on 21 July 2005, after a motion of confidence by Chancellor Gerhard Schröder (SPD). Schröder's decision to force a vote of confidence, which he intended to lose, can at least partly be explained by intra-party divisions within the SPD over labour market reform. The remainder of the paper is structured as follows: starting with the existing literature on the subject, we shall produce theoretical expectations on the nature of factionalism in the German Bundestag. We then proceed to describe the data collection and generation process. Positions of MPs are derived from their plenary speeches using the Wordscores method,² information on faction membership stems from an expert survey. An exploratory attempt to explain faction membership by institutional, political and sociological variables is undertaken for the larger parties SPD and CDU/CSU (Christian Democrats). The data are then analysed under different aspects. First, an analysis of variance (ANOVA) provides an answer to the question of whether preferences correspond to faction membership. Next, mean comparison tests are used to evaluate hypotheses on the expected direction of deviation from the party line by faction. A statistically more efficient random effects ANOVA (or multilevel analysis) adds confidence to the findings. Finally, the notion of geographically defined factionalism through *Landesgruppen* is introduced, controlling for ideological factions in a crossed random effects model. The paper closes with conclusions and speculates on possible avenues for future research.

RESEARCH ON FACTIONALISM

In the scholarly literature on parties, factionalism receives little attention.³ Sartori's influential 1976 book on parties and party systems briefly touches on intra-party groups and presents a typology of factions based on interests and principles.⁴ In contrast to parties, however, Sartori denies factions any functionality. A good share of the literature deals with factionalism in specific countries. Prime examples are Japan, India and Italy,⁵ where the Liberal Democratic Party, the Congress Party and the Christian

Democrats, respectively, constitute parties characterised by factionalism. For Germany, factionalism has mainly been an issue discussed in qualitative studies of single parties.⁶

Comparative efforts are scarce. In a pioneering study, Zariski points to the electoral system, the party system and sociological factors as influencing the severity of factionalism.⁷ Köllner and Basedau provide a recent overview of the literature on factionalism and present an analytical framework for comparative studies.⁸ The contributions in Köllner *et al.* reveal the observational variety of the phenomenon covering European, African, Asian and South American parties and party systems,⁹ yet almost all contributions are single-country or single-party studies. Erdmann introduces a more comparative aspect by reviewing, comparing and consolidating the studies of the edition and concludes that factionalism should not be regarded as a symptom of decline, but is capable of dysfunctional as well as functional effects.¹⁰

Another stream of literature focusing on factions consists of studies guided by rational choice institutionalism and treats factions as a dependent variable¹¹ or as an independent variable.¹² In Tsebelis' veto player approach, the number, the distance and the cohesion of institutional and partisan veto players are of analytical interest.¹³ He discusses the effects of intra-party politics – in terms of the cohesion of collective veto-players – on policy stability, but for reasons of tractability, continues treating parties as unitary actors in processes of policy decision-making.¹⁴ How factionalism can be incorporated into this framework is shown by König in a study on policy-making after the German 2005 federal election. By relaxing the unitary actor assumption he finds that with less cohesive government parties the potential for policy change will be greater.¹⁵ In a similar vein, Debus and Bräuninger use information on intra-party groups' policy positions to explain the allocation of ministerial posts in coalition governments.¹⁶

Recent studies have started to use methods for computational text analysis to obtain large sets of data on the policy positions of collective and individual political actors.¹⁷ While the initial and most common application of these methods is to party manifestos, it is equally useful for the (comparative) analysis of political speeches, held by different actors in similar settings. Laver and Benoit analyse speeches delivered in the Dáil, the Irish House of Representatives, during a debate on a confidence motion in 1991.¹⁸ The legislators are located in one 'pro- versus anti-government' dimension. Extreme values are assigned to government and opposition party leaders to obtain reference scores. Setting out to test the Wordscores method, the study pronounces the strong face validity of the results, reflecting perceived positions of legislators.¹⁹ Giannetti and Laver estimate the policy positions of cabinet and junior ministers in the Prodi government, formed after the Italian election of 1996, and examine the effect of policy positions of government members on spending patterns of departments.²⁰ Here again, one policy dimension is assumed on which government members are located based on the comparison of their speeches. In another study, Giannetti and Laver explore the cohesion and discipline of legislators of the Italian SD (Sinistra Democratica).²¹ Policy positions estimated from party congress speeches are used to operationalise factionalism and serve as an independent variable to explain legislative voting behaviour. Variations in party unity are explained by the incentive structures of Italian politics on the electoral, legislative and executive level and the parties' internal factional structure.

To sum up, most of the studies conceive of factionalism or operationalise factionalism in terms of the coherence of party members' preferences. Against this backdrop, our research interest concerns a new way of measuring factionalism and assessing its relevance in party politics. We conceive of factionalism as an organisational structure uniting MPs with similar preferences. Consequently, we can study factions in terms of the formal (or informal) membership of individual MPs, as well as the intra-factional homogeneity and inter-factional diversity of party member preferences. To do so, we use data from a survey of party officials to obtain information on faction membership, and use this data to study the distribution of policy positions within and across party factions. The data on policy positions is derived from plenary speeches of MPs in the 15th German Bundestag (2002–05).

PARTY FACTIONS AND FACTION MEMBERSHIP OF BUNDESTAG MPs

The parties covered in this study are the SPD, the CDU/CSU, the Free Democratic Party (FDP) and the Alliance '90/The Greens (Greens). Table 1 lists the main intra-party factions of each of these parties. The SPD has three established groupings with organisational structure, the 'Seeheimer Kreis', the 'Parlamentarische Linke' and the 'Netzwerk Berlin' ('Netzwerker').²² In the CDU/CSU, the two main factions are the 'Christlich-Demokratische Arbeitnehmerschaft'/'Christlich Soziale Arbeitnehmerschaft' (CDA/CSA) and the 'Mittelstandsvereinigung'.²³

TABLE 1
PARTY FACTIONS AND EXPECTED POLICY STANCE

Party, party core, or faction	Expected direction of deviation in economic/ social policy dimension	N
CDU/CSU		218
Party core	baseline	77
Parlamentskreis Mittelstand	right/-	72
Arbeitnehmergruppe	left/-	69
SPD		226
Party core	baseline	13
Seeheimer Kreis	right/right	83
Netzwerker	right/left	32
Parlamentarische Linke	left/left	87
FDP		49
Party core	baseline	6
Liberaler Mittelstand	right/-	20
Freiburger Kreis	-/left	7
<i>Other</i>	-/-	16
Greens		53
Party core	baseline	5
Realos	right/-	33
Linke	left/-	15
Total		546

Note: 11 SPD MdBs are members of more than one faction. These groups are not displayed here but included in the later analysis. The double memberships are: Linke und Netzwerker (2 MdBs), Seeheimer und Netzwerker (8 MdBs), Linke and Seeheimer (1 MdB). The classification is missing for 1 CDU/CSU member.

Source: Surveyed experts.

Factions within the FDP are more difficult to identify.²⁴ The strongest and mainstream faction is the 'Liberaler Mittelstand'.²⁵ The remainder of the 'Freiburger Kreis', which emphasises social liberalism, forms a second faction. The Greens have a less formalised, but strong factional structure with two groups, known as the 'Realos' and 'Linke'.²⁶

How do party factions differ from each other? A priori expectations about the relative positioning of faction members can be derived from what factions publicly declare to be their ultimate goals and ambitions. The CDA/CSA, for instance, claims to represent the interests of employees within the CDU/CSU. We would therefore expect its members to hold positions on the economic policy dimension that are to the left of the average CDU/CSU member or party core, respectively. Obviously, shared objectives in one policy area do not necessarily transfer to other policy dimensions. For example, we would not expect CDA/CSA members to differ from the rest of the CDU/CSU in terms of social policies such as abortion or gay rights. The first column of Table 1 shows the expected directions of deviation for each faction in two policy areas, economic policy and social policy. The second intra-party faction of the Christian Democrats, the *Mittelstandsvereinigung*, claims to represent the interests of small and middle-sized companies, and therefore should take a more rightist stance on economic policy. In the SPD, the *Parlamentarische Linke* lobbies for employees and considers itself the left wing of the party, while in the *Seeheimer Kreis* they consider themselves closer to the self-employed. We thus expect the former to be to the left and the latter to the right of the party core on both the economic and the social dimension. The *Netzwerker* is a more recent grouping within the SPD often considered to put more emphasis on market liberalism than the party core but to be leftist on social policies. The FDP factional structure reflects different emphasis of policy areas rather than policy positions.²⁷ Still, the *Liberaler Mittelstand* is a small business-owners' lobby and is expected to lean towards the right as compared to the rest of the party on the economic policy dimension. The *Freiburger Kreis* has always been concerned with social liberalism and is therefore presumed to deviate to the left on social policies.

An Expert Survey on Faction Membership

To obtain the information on faction membership, we conducted a mail survey of experts in late 2007 and early 2008. More specifically, we asked Bundestag MPs to allocate members of their party in the 15th German Bundestag to one or more of the factions defined above. We included two residual categories indicating other, unspecified factions or no faction membership.²⁸ 547 MPs were covered in the survey.²⁹ We asked MPs who were members of both the 15th and 16th Bundestag to fill out the questionnaire in order to establish their familiarity with intra-party organisations and faction affiliations of MPs. Of the three MPs per party to whom we sent out the questionnaire, one from each party responded.³⁰ Due to the small number of respondents we cross-checked the data with information on faction membership from various sources, e.g. faction websites, publications, and members' media appearance. The survey data appeared to have a high level of validity. Also, we searched for patterns of random answers in the surveys but with no contradictory results. The number of MPs per faction and party is shown in the last column of Table 1. The data indicates relatively balanced main factions within the larger parties, while the smaller parties have one

dominant faction each. The party core of the CDU/CSU is the largest with about one-third of the MPs not belonging to any intra-party group. Eleven Social Democrats are affiliated to two groups; 16 FDP MPs were classified in the category 'others'. In total, we have nine factions, four party cores and one residual group.

Explaining Faction Membership

Before we analyse the link between factional membership and expressed policy positions, we provide some exploratory insights into the determinants of faction membership. Who are the members of the different factions? What, apart from the programmatic orientation, influences the decision to join the left wing of the SPD and become a member of the Parlamentarische Linke? To answer these questions, faction membership is related to institutional and socio-demographic variables running multinomial logistic regressions for the two larger parties, the Social Democrats and the Christian Democrats. The results are displayed in Table 2.

The models include two socio-demographic variables, age and gender, a dummy variable for an Eastern German electoral base, and a series of politico-institutional factors: a dummy for those who hold a leadership position in the parliamentary party, and a dummy for election mode, i.e. direct election or election via a party list.³¹ Classified as holding a leadership position are parliamentary floor leaders and their deputies, the president and vice presidents of the Bundestag, spokespersons of working and other groups, parliamentary floor managers and their deputies, legal advisers and members of the extended party group presiding board. The likelihood ratio

TABLE 2
MULTINOMIAL LOGISTIC REGRESSIONS OF FACTION MEMBERSHIP (RELATIVE RISK RATIOS)

		SPD	CDU/CSU
SPD: Party Core; CDU/CSU: Party Core	Male	2.07 (1.34)	2.67 (1.21)**
	Age	1.01 (0.04)	0.97 (0.02)
	East Germany	6.80 (4.91)***	0.43 (0.22)*
	Leader	1.12 (0.79)	0.56 (0.22)
	Election via party list	0.80 (0.53)	0.50 (0.18)*
SPD: Seeheimer Kreis; CDU/CSU: Mittelstandsvereinigung	Male	2.07 (0.69)**	1.14 (0.47)
	Age	1.01 (0.02)	0.97 (0.02)
	East Germany	3.98 (1.94)***	0.33 (0.18)**
	Leader	1.52 (0.51)	0.77 (0.30)
	Election via party list	0.63 (0.21)	0.37 (0.14)***
SPD: Netzwerker	Male	0.86 (0.44)	
	Age	0.84 (0.03)***	
	East Germany	1.45 (1.04)	
	Leader	1.98 (1.06)	
	Election via party list	0.72 (0.40)	
LR chi-squared		78.89	22.32
Prop. \geq chi-squared		0.00	0.01
Log likelihood		-228	-228
N		226	218
Pseudo R-squared		0.15	0.05

Note: Standard errors in parentheses. The baseline category is Parlamentarische Linke for the SPD, and CDA/CSA for the CDU/CSU. *p < 0.1, **p < 0.05, ***p < 0.01.

tests allow us to reject the hypothesis that all coefficients except the intercept equal zero in both models. The coefficients are reported as relative risk ratios, which indicate the factor of change in the odds of belonging to a group relative to the odds of belonging to the baseline group as there is a one unit change in the independent variable. For the CDU/CSU, males are 167 per cent more likely to belong to the party core than the CDA/CSA. An Eastern German electoral base reduces the likelihood of belonging to the party core as compared to the CDA/CSA by 57 per cent, and it reduces the likelihood of belonging to the Mittelstandsvereinigung by 67 per cent. MPs elected via party lists are also more likely to be members of the CDA/CSA. Their chance of being a member of the party core is reduced by 50 per cent, while for the Mittelstandsvereinigung it is reduced by 63 per cent. In the SPD parliamentary party, being of Eastern German origin is also influential in the choice of faction membership. The likelihood of SPD MPs belonging to the party core is increased by 580 per cent as compared to belonging to the Parlamentarische Linke, while the chance of being a member of the Seeheimer Kreis is increased by 298 per cent. Furthermore, males carry a 107 per cent higher likelihood of belonging to the Seeheimer Kreis instead of the Parlamentarische Linke. The Netzwerker are younger than the members of the Linke, and the chance of being a Netzwerker is reduced by 16 per cent with every year of age. In sum, women appear to be more 'leftist' in both parties, and Eastern German MPs appear to be more 'centrist', tending towards the right wing or party core in the SPD and towards the left wing in the CDU/CSU. Holding a leadership position in the parliamentary party does not influence faction membership. We now turn to the analysis of the impact of factional membership on expressed policy positions.

PREFERENCE HETEROGENEITY WITHIN PARTIES

Wordscores

For the purposes of this paper, the data on expressed policy positions of single MPs is derived from their plenary speeches using quantitative content analysis. The Wordscores method, devised by Laver *et al.*, starts with the assumption that political text carries policy signals.³² For this reason, Laver *et al.* assume that policy positions can be derived from the relative frequency of words used in a text. Essentially, estimating policy positions by means of Wordscores is based on a comparison of two sets of texts, labelled 'reference' and 'virgin' texts.³³ The reference texts need to be manifestations of 'known' policy positions on well-defined a priori policy dimensions. From the reference texts, word scores are generated which carry word-specific information on policy positions and are used to estimate the positions of the virgin texts.

Wordscores requires an a priori decision on the policy dimensions of interest.³⁴ There is no 'true' dimensionality of policy spaces.³⁵ Potentially, the number of policy dimensions is infinite, as every imaginable issue can be defined as one dimension in itself. Consequently, the research question influences the decision on policy dimensions. For our purposes, the dimensions adopted should enable us to include a sufficient number of speeches. We seek some guidance from prior studies. Pappi and Shikano draw on the cleavage theory of Lipset and Rokkan and on results from expert surveys provided by Laver and Hunt.³⁶ They assume a two-dimensional

cleavage structure in Germany – the ‘Benelux-Konstellation’ – reflected in an economic and a social policy dimension. We follow this argument and focus on parliamentary debates that refer to economic, welfare and finance policies, or that are linked to social policy issues. We use expert survey data of party policy positions provided by Benoit and Laver as reference positions for wordscoreing these debates.³⁷ Benoit and Laver provide estimates for a dimension labelled ‘taxes vs. spending’, asking for the willingness of parties to raise taxes in order to increase public service. These positions are used in this paper as an approximation for positions on all economic, welfare and finance policies, which is referred to as the economic policy dimension. We use the parties’ positions on ‘social liberalism’ to estimate MPs’ positions on a social policy dimension as this comes close to the meaning of the second major cleavage in German politics.

A crucial decision within the Wordscores framework is the selection of reference texts.³⁸ Here, the survey estimates for parties are assigned to the parliamentary floor leaders in the 15th Bundestag, whose speeches are used as reference texts.³⁹ The procedure guarantees a reasonable coverage of words, as the speeches of floor leaders pooled across the entire legislative period each consist of several thousand unique words. As the virgin texts to be scored are speeches as well, using speeches certainly is advantageous as compared to party manifestos (or the like) in terms of their lexicon.⁴⁰ Finally, the speeches of party leaders in parliament cover all issues of interest. Parliamentary party leaders in the 15th German Bundestag and their assigned positions are shown in Table 3.

On the economic policy dimension, a value of one on the scale represents the will to raise taxes in order to increase public services, 20 represents the will to cut public services in order to cut taxes.⁴¹ Social liberalism issues such as abortion, homosexuality and euthanasia are more pronounced for values close to one than for values close to 20. As Table 3 shows, the positions of Benoit and Laver’s surveys splendidly reflect the German cleavage structure, with the SPD and the Greens taking positions to the left of the CDU/CSU and the FDP in the economic policy dimension whereas on social policies, the CDU/CSU is to the right of all other parties.

The construction of virgin texts to estimate policy positions of single MPs is the next step of interest. For the entire legislative period, all texts of MPs’ speeches are collected and pooled into dimension-specific ‘personal manifestos’, reflecting

TABLE 3
PARLIAMENTARY FLOOR LEADERS AND ASSIGNED POLICY POSITIONS

Party	Floor Leader	Eco	Soc
CDU/CSU	Angela Merkel	14.4	15.9
FDP	Wolfgang Gerhardt	18.7	5.3
SPD	Franz Müntefering	9.3	7.3
Greens	Krista Sager/Katrin Göring-Eckardt	11.0	2.4
PDS	None	3.0	4.9

Notes: ‘Eco’ = Economic policy; ‘Soc’ = Social policy.

Sources: PPG leaders: Kürschners Volkshandbuch, *Deutscher Bundestag: 15. Wahlperiode* (Darmstadt: NDV, 2003); Policy positions: Kenneth Benoit and Michael Laver, *Party Policy in Modern Democracies* (London: Routledge, 2006), p.213.

the policy stance of a single MP on a given dimension. This involves a selection of the relevant debates, their disaggregation into single speeches that can be assigned to individual legislators and the re-aggregation of speeches delivered by each legislator at the level of the policy dimensions defined. The raw data – records of the 187 plenary sessions of the 15th German Bundestag – was processed using a computer program to separate records of plenary sessions into single debates and as a subroutine into single speeches delivered.⁴² The next step is the selection of relevant debates and their classification as belonging to one or several of the selected dimensions. The causes of plenary debates in the Bundestag are diverse.⁴³ The reading of a bill is the most frequent occasion, but there are also debates on request (*Aktuelle Stunden*) where current affairs are discussed, debates following government declarations, debates on reports of different origin and debates for other reasons. All debates, regardless of their type, which can be connected to at least one of the policy dimensions, are included in the analysis.⁴⁴

For the 15th session of the Bundestag, about 940 debates are identified in total. Of these, 517 can be linked to at least one of the two policy dimensions, a share of 55 per cent. A small portion of the debates used (32) are classified as covering more than one dimension. These include several debates following government declarations or on the budget of the chancellor, which are classified as spanning all dimensions. Of the remaining ‘single-issue’ debates, the largest portion concerns economic policies (456). The number of debates linked to social policy (29) is much smaller. Subsequently, two strategies of speech aggregation at the level of individual legislators are possible. First, all speeches of each MP could be appended and treated as a ‘personal manifesto’. Then, policy positions of MPs could be estimated on the basis of a single virgin text per deputy. This approach requires that all legislators give statements concerning all relevant policy fields. Due to specialisation, this does not apply. While 430 of the 547 MPs covered in the survey have delivered speeches related to economic policy, only 132 spoke during debates on social policy. It is, however, not reasonable to estimate policy positions on one dimension – e.g., economic policy – on the basis of virgin texts containing only speeches on other issues – e.g., social policy. To avoid this and the equally unattractive alternative to drop the legislators who did not speak in all policy fields, legislators’ speeches for each policy field are appended separately, and these dimension-specific virgin texts are used to estimate positions of MPs for that dimension only.

Finally, the policy positions of 453 MPs can be estimated.⁴⁵ In Figure 1 and 2, the distribution of MPs’ positions on economic and social policy is shown by party factions. We note that the number of observations per faction and dimension differs since not every MP gave a speech in every policy field. For that reason, figures based on a small number of scored MPs should be taken with a dose of caution. Overall, the mean positions of legislators by party reveal that party affiliation is a good predictor of the policy positions of MPs. A regression of policy positions in the economic policy dimension on party affiliation (not reported) yields an adjusted R^2 of .45, providing some evidence for the validity of the results. Furthermore, the rank-ordering of party means largely resembles the expected rank-ordering as shown in Table 1. In sum, we have some trust that the application of Wordscores to parliamentary speeches of MPs is able to convincingly identify programmatic differences

FIGURE 1
DISTRIBUTION OF MPs' POSITIONS ON ECONOMIC POLICY DIMENSION (KERNEL DENSITY PLOT)

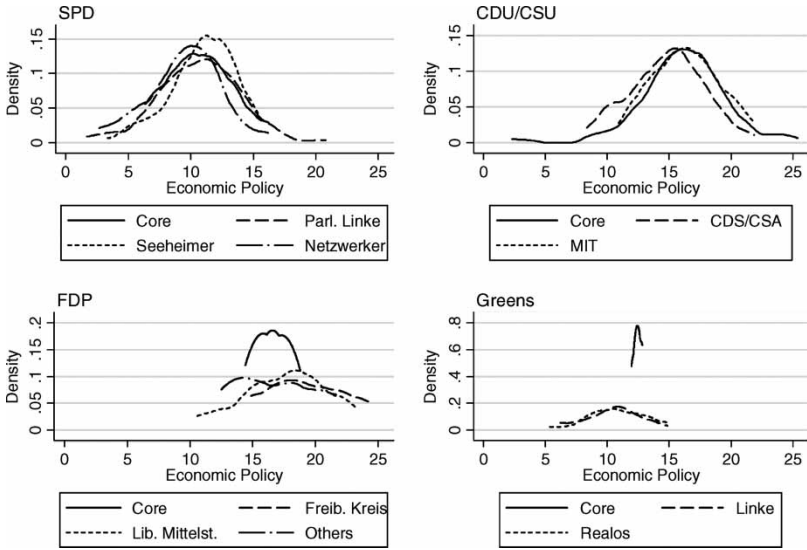
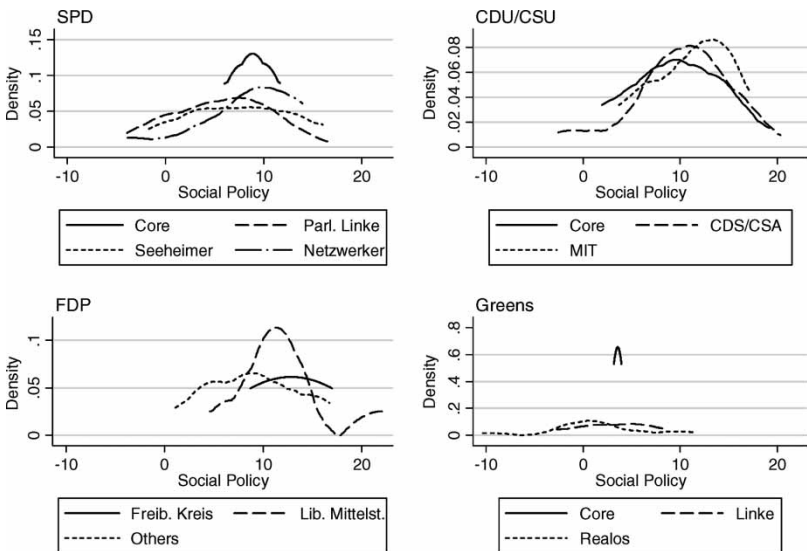


FIGURE 2
DISTRIBUTION OF MPs' POSITIONS ON SOCIAL POLICY DIMENSION (KERNEL DENSITY PLOT)



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between parties. Furthermore, there is considerable intra-party variation which we study in the next section.

Faction Membership and Expressed Policy Positions: Descriptive Statistics

Looking at Figures 1 and 2, we can assess some of our propositions from a descriptive point of view. First, we can clearly identify some variation in the mean positions of MPs in different factions. Members of the left-wing faction of the SPD, the *Parlamentarische Linke*, expressed a mean position on the economic policy dimension of 10.6, while members of the right-wing *Seeheimer Kreis* positioned themselves at a mean of 10.9, and the *Netzwerker* (9.4) are placed left of both the party core (at 10.7) and the *Parlamentarische Linke*. Mean positions of CDU/CSU faction members differ more clearly in the economic policy dimension with 14.8 for the CDA/CSA and 16.3 for the *Mittelstandsvereinigung* (party core at 16.1).

Regarding the two smaller parties, members of the faction *Linke* within the Green party position themselves at a mean of 10.4, while the mean position of the *Realo* faction is at 10.8 (party core at 12.4). Members of the FDP's *Freiburger Kreis* display a mean position of 19.2, while the same party's *Liberaler Mittelstand* faction stands at 17.5 (party core 16.6). Note that the observations for the FDP factions in the first dimension do not contradict our predictions laid out above, as there is only a prior for the positioning of the *Liberaler Mittelstand* towards the party core. Generally, the directions of the deviations from the party core are as predicted in all of the cases regarding the economic policy dimension except the *Netzwerker* faction of the SPD and the case of the Green party, where the difference between the 'left' and the 'right' wing meets the expectation.

Regarding the social policy dimension, we also observe variation between factions but less of the predicted patterns. Apparently, small numbers of observations per faction go along with patterns that are not expected. From among the four predictions concerning social policy, one is reflected in the data, while there is only partial evidence for two. The *Parlamentarische Linke* is placed left (5.7) of the party core (8.9) and the *Seeheimer Kreis* (7.6) as expected. But the *Seeheimer Kreis* is not placed to the right of the party core. If a more relaxed concept of deviation is introduced, which focuses on the relative position towards the main party wing at the other end of the spectrum, the deviation of the *Seeheimer Kreis* would be in line with expectations. Such an approach probably makes more sense as the number of cases in the party core category for the SPD in the social policy dimension is only four. The prediction for the *Netzwerker* faction is correct in the strict sense, as it is placed to the left (8.3) of the party core. At the same time, the faction is placed to the right of the *Seeheimer Kreis*, which is inconsistent with the alternative concept of deviation. Other open issues remain. Turning to the FDP, for instance, the *Freiburger Kreis* does not take a more liberal stance than any other faction, which was the expectation.

Faction Membership and Expressed Policy Positions: Analysis of Variance

Let us study these descriptive impressions in more detail. Given the small number of cases in the social policy dimension, the subsequent analysis is confined to the economic policy dimension. Instead of relying on a single method, the statistical analysis of

the data is fivefold, serving additional validation of the results or serving differing research interests. First, single factor analysis of variance (ANOVA) per party reveals the extent, i.e. explanatory power in terms of variance explained, and the significance of intra-party variation between factions. Second, we use a Bonferroni test to compare differences between mean positions of faction members. Third, a two factor ANOVA is used to explore the overall extent and significance of intra-party variation between factions when party membership is accounted for. Fourth, we use a random effect ANOVA as a check of robustness across different methods, but also for reasons of efficiency. The random effect ANOVA is a multilevel model which uses maximum likelihood estimation to obtain estimates for random variables that catch group-level variance. Fifth and finally, the scope of the analysis is widened by introducing a new source of factionalism, the *Landesverbände* which reflect the origin from a specific state of the German federation. A crossed random effects model facilitates the assessment of the cross-nested data structure.

First and foremost, we put forward the argument that faction membership and policy positions are linked. An analysis of variance (ANOVA) offers just the information we are interested in by portioning variation in a metric variable due to one or several categorical variables.⁴⁶ ANOVA answers how much variation is explained by a factor as well as whether a factor represents groups with statistically significant differences. One possible strategy is to perform one-way ANOVAs for single parties and their respective factions. Table 4 summarises the results.

The ANOVAs reveal the variation in expressed economic policy positions explained by factional membership. For the CDU/CSU, 5 per cent of the variance can be explained by faction membership, for the SPD 4 per cent, for the Greens 4 per cent and for the FDP 7 per cent. Only the model for the CDU/CSU reaches an overall level of statistical significance ($p = 0.014$). Nevertheless, given small *N*s, and the host of other contextual, situational and individual (as well as methodological) factors influencing expressed policy positions, we take these results as an encouragement for further investigation.

In the next step, directions of the factions' deviations are of interest. As only the CDU/CSU factions show statistically significant differences in their positions, the analysis is confined to these. We return to the single-party ANOVA computed before and use subsequent Bonferroni tests to compare mean values of groups. The Bonferroni test corrects levels of significance for the fact that multiple comparisons are undertaken. Table 5 provides an overview of the test statistics.

TABLE 4
ONE-WAY ANOVAs OF EXPRESSED POSITIONS (ECONOMIC POLICY); FACTOR: FACTIONAL MEMBERSHIP

Party	Between groups SS	Within groups SS	Total SS	R-squared	F	Prob. > F
CDU/CSU	84	1660	1744	0.05	4.37	0.014
SPD	72	1574	1646	0.04	1.26	0.279
Greens	10	235	245	0.04	0.87	0.426
FDP	28	364	392	0.07	0.88	0.462

TABLE 5
 BONFERRONI TESTS OF MEAN VALUE DIFFERENCES ACROSS GROUPS (ECONOMIC
 POLICY): CDU/CSU FACTIONS

Row mean – col mean	Core CDU/CSU	CDA/CSA
CDA/CSA	-1.37 (0.06)	
MIT	0.19 (0.94)	1.56 (0.03)

P-values in parentheses.

For the CDA/CSA, means are both significantly smaller than those of the Mittelstandsvereinigung and the party core. There is no significant difference between members of the party core and the Mittelstandsvereinigung. An alternative strategy to analyse the impact of factions on expressed policy positions is a two-factor ANOVA pooling parties and factions. Table 6 provides the results.

The pooling of parties and factions results in an overall statistically significant model. Party affiliation contributes the lion's share of the variance explained (adjusted $R^2 = .46$). The factor's contribution is clearly significant. The second factor — faction membership — also adds to the variance explained and is at the margins of conventional levels of statistical significance with $p = 0.08$. The exact amounts of variance explained by the single components cannot be provided, as party and faction membership are strongly correlated. Therefore, a simple additive partitioning of the sums of squares into unique portions associated with each factor is not possible.⁴⁷ In addition to this interpretational problem, the two-factor ANOVA procedure is inefficient because of the unbalanced design. By definition, every faction is only a part of a single party. Very much in opposition to a balanced design, individuals are clustered in factions, which in turn are clustered in parties. The hierarchical data structure clearly demands multilevel modelling.

In multilevel analysis, random variables catch the group-level variance.⁴⁸ The method increases the efficiency of the model in terms of saving 12 degrees of freedom compared to two-factor ANOVA. Instead of parameters for each group, a single random parameter is estimated. An 'empty' model, which has no covariates, equals 'random effect ANOVA'.⁴⁹ As only four groups on the highest (party) level would be ill-suited for the maximum-likelihood estimation of a separate random

TABLE 6
 TWO-FACTOR ANOVA OF EXPRESSED POSITIONS (ECONOMIC POLICY); FACTORS: PARTY,
 FACTION

Source	Partial SS	df	F	Prob. > F
Model	3477	16	23.42	0.00
Parties	690	3	24.78	0.00
Factions	194	13	1.61	0.08
Residual	3833	413		
Total	7310	429		
Observations	430			
Adj. R-squared	0.46			

effect, party affiliations are introduced as fixed effects in the model, while the faction-dependent variance in expressed policy positions is estimated by a random variable.

A Stata implemented multilevel model (see Table 7) provides estimates for the variance components of 0.27 at the faction level and 9.24 at the individual level after party affiliation is controlled for. The likelihood ratio test against linear regression is statistically significant with a p -value of .04, indicating the role of factions in explaining expressed positions of MPs. The variance components can be used to calculate a residual intra-class correlation coefficient, which indicates the amount of variance situated at a specific level after controlling for covariates.⁵⁰ The formula for the two-level case is:

$$\rho_l(Y|X) = \frac{\tau_0^2}{\sigma^2 + \tau_0^2}$$

Where ρ_l denotes the intraclass correlation in Y for two individuals when X is controlled for, σ^2 denotes the variance of the random effect at the individual level, and τ_0^2 denotes the variance of the random effect at the group level. Inserting the values obtained using the random effects ANOVA model we can compute the residual intra-class correlation coefficient for the faction level as:

$$\rho_l(Y|X) = \frac{0.27}{9.24 + 0.27} = 0.028$$

Accordingly, the residual ‘likeness’ of MPs in the same faction is about 3 per cent. This tells us that if we randomly take one MP from a faction after controlling for party affiliation, we can predict the positioning of another MP from the same faction to

TABLE 7
TWO MULTILEVEL MODELS OF EXPRESSED POSITIONS (ECONOMIC POLICY)

	Mixed effects model	Crossed effects model
SPD	-6.98 (0.67)	-6.97 (0.67)
CDU/CSU	-1.70 (0.68)	-1.68 (0.69)
Greens	-6.62 (0.57)	-6.64 (0.82)
Constant	17.45 (0.82)	17.45 (0.58)
Standard deviation constant (factions)	0.52 (0.25)	0.53 (0.25)
Standard deviation constant (regions)		0.42 (0.27)
Standard deviation residual	3.04 (0.11)	3.02 (0.11)
Residual intraclass correlation (factions)	0.03	0.03
Residual intraclass correlation (regions)		0.02
N level 1	430	430
N level 2 (factions)	17	17
N ‘level’ 3 (regions)		16
LR test vs. linear regression: Prob. \geq chibar-squ.	0.04	0.12

Note: Standard errors in parentheses. FDP is the omitted reference category for party membership. ‘Level’ 3 in the second model is not a level in the hierarchical sense, because the affiliations to Länder and factions are crossed. Calculations made with xtmixed command of Stata 9. Xtmixed needs to be ‘tricked’ to set up the model; see Sophia Rabe-Hesketh and Anders Skrondal, *Multilevel and Longitudinal Modeling Using Stata* (College Station, TX: Stata Press, 2008), p.475. All models are estimated using restricted maximum likelihood (reml).

the extent of 3 per cent. The estimate is slightly lower than those in the single-party ANOVA approach. The one-way ANOVAs yielded shares of explained variance of about 5 per cent per party. The reason is the overlapping of distributions. Once we account for party membership, factions help us less in predicting the position of a MP in a given party, as s/he might also be positioned in the area of another party.

In a final step of the analysis, the possible regional source of factionalism is assessed.⁵¹ For this purpose, the origin of the MPs in terms of their *Landesverband* (state organisation) is considered. Using a random crossed-effects model, the simultaneous, crossed data structure of MPs from different Länder in factions is suitably and efficiently handled. The results, displayed in the last column of Table 7, indicate an approximately equal role of regional attachment and factional attachment for expressed policy positions on economic policy. The respective residual intra-class correlation coefficients are still .03 for the factional level and .02 for the Länder level. The Länder factor seems to be slightly less influential than faction membership, and the model fails to pass a likelihood ratio test against linear regression.

CONCLUSION

Does factionalism manifest itself in observable intra-party preference heterogeneity? This paper seeks to contribute to the debate by focusing on the link between faction membership and the expressed policy positions of members of the German parliament. We identified nine factions and eight other groups in the four parliamentary parties of the 15th German Bundestag and theorised on their expected positioning relative to party cores in two policy dimensions. The policy positions of single MPs on these dimensions are estimated using computer-aided content analysis of their plenary speeches. One-way and multifactor ANOVAs yielded ambivalent findings on the relevance of factional affiliation for expressed positions on economic policy. The one-way ANOVAs, considering only single parties, demonstrate statistically significant variation in the positioning of factions only for the CDU/CSU. Considering party and faction membership simultaneously, the contribution of factional affiliation to the explained variance of expressed policy positions appears to be in the twilight zone of statistical significance. More efficient random effects ANOVAs indicate the relevance of factionalism more clearly. In addition, these models enable us to quantify the variance in positions on economic policy explained by faction membership at about 3 per cent.

The results are limited, but arguably not to be neglected. Slim majorities are often decisive in the making or breaking of governments.⁵² Two arguments help explain why some of the observed patterns are not in line with our expectations and why the extent of observed factionalism is rather small. First, and methodologically, the measurement of policy positions in the social policy dimension might push the Wordscores method to its limits, as the reference texts (speeches of parliamentary floor leaders) do not necessarily cover the policy areas extensively. Still, the share of virgin text words scored in this dimension is about 90 per cent. Furthermore, the number of cases per group is very small (averaging ten), especially for the two smaller parties, shedding doubt on the extent to which we can generalise the results for social policy.

Second, parties might prevent potential mavericks from speaking in the plenum. Informal parliamentary party groups (PPG) standing orders and rules require MPs to report speeches, votes and proposals deviating from the party line to the PPG leadership before making them public.⁵³ For example, the fiercest critics of Schröder's social reform package 'Agenda 2010', Ottmar Schreiner, Florian Pronold and Andrea Nahles, did not have the floor frequently during plenary debates in the 15th German Bundestag.

Plenary speeches are highly observable by the party leadership and the general public. In other settings, in particular behind closed doors and during secret ballots, factionalism should have a much greater effect on political outcomes. Therefore, against this consideration of tight parliamentary party control, our findings support the hypothesis that factions 'matter' more. Despite these limitations in the extent to which we expect to observe the consequences of factionalism in parliamentary behaviour during speeches, we still find some of the expected patterns.

From the example of the SPD MPs prevented from taking the floor to speak, we can suspect that government status gives a party more leeway to make their MPs toe the party line. Obviously, these and other factors cannot be accounted for in a systematic way in a study covering only one political system. In this direction, a wide array of potential research questions, beyond the ones proposed here, offer themselves. The rather unique data on policy positions of individual political actors, estimated from their speeches using language-blind textual content analysis, could be applied to a larger sample of legislators from different parliaments. Truly comparative research would be desirable, taking into account the system and party level not regarded here.

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NOTES

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28. The questionnaire is available from the corresponding author, Julian Bernauer. Email: julian.bernauer@uni-konstanz.de
29. These 547 are the MPs who delivered speeches related to either of five policy dimensions (including EU, foreign and domestic security policy) selected in the context of broader research.
30. The questionnaire on the SPD was actually filled in by a staff member.
31. Source is Kürschners Volkshandbuch, *Deutscher Bundestag: 15. Wahlperiode* (Darmstadt: NDV, 2003).
32. Laver *et al.*, 'Extracting Policy Positions', p.311.
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37. Benoit and Laver, *Party Policy*, pp.180f., 213.
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39. In the FDP parliamentary party, Guido Westerwelle's share of plenary speaking time clearly exceeded that of the formal chair Wolfgang Gerhardt. He also regularly spoke first in major debates, which indicates his de facto leadership in the FDP parliamentary party. Therefore, Westerwelle's speeches instead of Gerhardt's are used as reference texts. Bündnis 90/Die Grünen traditionally have two PPG leaders. Their speeches are combined, since each of them specialised in certain policy areas and spoke in the related debates. The PDS did not have a PPG status in the 15th Bundestag and consequently no PPG leaders.
40. Giannetti and Laver, 'Policy Positions and Jobs', p.103.
41. Benoit and Laver, *Party Policy*, pp.180f.
42. The records of the 139th plenary session could not be analysed due to poor quality of the data file. Difficulties arose concerning the removal of *Zwischenfragen* (questions to the speaker). These occur frequently during speeches and could only be partly removed. A systematic cleansing would be advantageous but is very time-consuming given the thousands of speeches. The extent of the 'noise' should not be overestimated, though. In a random sample of 15 speeches containing 23,151 words, only two *Zwischenfragen* with 157 words were found. Also not removed are comments in the plenary records, including the announcement of the speaker by the president or vice president, notes of reactions such as applause or laughter and the occurrence of heckling. These comments are likely to be equally distributed across all speeches and should therefore have limited influence on policy positions. Finally, floor interventions (*Kurzinterventionen*) during debates are not considered.
43. Ismayr, 'Der Deutsche Bundestag', pp.315f.
44. Not considered are question times (*Fragestunden*), which do not have the character of debates. The questions asked by MPs are rather short. Nevertheless, they could reveal interesting information on the policy concerns of MPs, since questioning the government is one of the few remaining rights granted to individual MPs. They are disregarded since their structure is different from debates.
45. Wordscores software can be downloaded from: [http://www.tcd.ie/Political Science/wordscores/software.html](http://www.tcd.ie/Political%20Science/wordscores/software.html). For the economic policy dimension, the 20,000 most frequent unique words were used in the calculation of positions on this dimension. This restriction was necessary due to insufficient computing power. Overall, about 100,000 unique words are found in all texts on economic, finance and welfare policy, many of them appearing very rarely. Only words which appear both in reference and virgin texts add certainty to the position estimates of virgin texts. But, since both position estimates and standard errors are weighted by word frequencies, dropping seldom used words has limited influence on these. These considerations are confirmed by recomputation of the scores for economic and welfare policy using the 10,000 most frequent unique words only, therefore dropping 10,000 even more frequently used unique words. While the mean number of total words in virgin texts is reduced by only 79 words to 9,530 words, the percentage of scored words rises on average from 94.4 to 96.5. Some party-unspecific movement of policy positions does occur, as the mean absolute shift of policy positions is 0.22 scale points. Standard errors change only incrementally, indicating that the quality of the estimates remains largely unchanged. While it is not desirable to ignore even very rarely spoken words, the strategy is unlikely to bias the results substantially.
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53. Ismayr, 'Der Deutsche Bundestag', p.47.